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glycol (240°C), cotton lint (245°C), furfural (270°C), lactose, metal powders (e.g., aluminum, iron, magnesium, molybdenum, nickel, tantalum, titanium), sulfur, titanium hydride. Reaction with ethanol + heat forms the explosive ethyl perchlorate. Violent reaction or ignition under the proper conditions with aluminum + aluminum fluoride, barium chromate + tungsten or titanium, boron + magnesium + silicone rubber, ferrocenium diamminetetrakis(thiocyanato-N) chromate(1−), potassium hexacyanocobaltate (3−), Al + Mg, charcoal, F_2, Ni + Ti, reducing agents. When heated to decomposition it emits very toxic fumes of K_2O and Cl^-. See also PERCHLORATES.

PLP000 CAS:7722-64-7 HR: 3
POTASSIUM PERMANGANATE
DOT: UN 1490
mf: MnO_4K mw: 158.04

PROP: Air-stable, dark-purple crystals with a blue metallic sheen; sweetish astringent taste. Aq solns slowly deposit MnO_2. Mp: decomp @ <240°, d: 2.703. Sol in H_2O; mod sol in MeOH, AcOH, Me_2CO, and Py.

SYNS: CAIROX □ CHAMELEON MINERAL □ C.I. 77755 □ CONDY'S CRYSTALS □ KALIUMPERMANGANAAT (DUTCH) □ KALIUMPERMANGANAT (GERMAN) □ PERMANGANATE de POTASSIUM (FRENCH) □ PERMANGANATE of POTASH (DOT) □ POTASSIO (PERMANGANATO di) (ITALIAN) □ POTASSIUM (PERMANGANATE de) (FRENCH)

CONSENSUS REPORTS: Manganese and its compounds are on the Community Right-To-Know List. Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

OSHA PEL: CL 5 mg(Mn)/m³
ACGIH TLV: TWA 5 mg(Mn)/m³
DOT CLASSIFICATION: 5.1; *Label:* Oxidizer

SAFETY PROFILE: A human poison by ingestion. Poison experimentally by ingestion and intravenous routes. Moderately toxic by subcutaneous route. Human systemic effects by ingestion: dyspnea, nausea, other gastrointestinal effects. Experimental reproductive effects. Mutation data reported. A strong irritant due to its oxidizing properties. Used in production of drugs of abuse, as a topical antibacterial agent, and a chemical reagent.

Flammable by chemical reaction. A powerful oxidizer. A dangerous explosion hazard; handle with care. Explosions may occur in contact with organic or readily oxidizable materials, either when dry or in solution. Dangerous: keep away from combustible materials.

Explodes on contact with acetic acid, acetic anhydride, ammonium nitrate, dimethylformamide, formaldehyde, concentrated hydrochloric acid, potassium chloride + sulfuric acid, sulfuric acid + water. Forms sensitive explosive mixtures with aluminum powder + ammonium nitrate + glyceryl nitrate + nitrocellulose, ammonium perchlorate, arsenic, phosphorus, sulfur, slag wool, titanium.

Ignites on contact with Al_4C_3, dimethyl sulfoxide, ethylene glycol, H_2S_2, HCl, H_2SO_4, (H_2SO_4 + organic matter), (H_2SO_4 + KCl), NH_4ClO_4, NH_3, NH_4, NO_2, NH_4OH, organic matter, wood, oxygenated organic compounds (e.g., ethylene glycol, propane-1,2-diol, erythritol, mannitol, triethanolamine, 3-chloropropane-1,2-diol, acetaldehyde, isobutyraldehyde, benzaldehyde, acetylacetone, esters of ethylene glycol, lactic acid, acetic acid, oxalic acid).

Violent reaction or ignition under the proper conditions with acetone + tert-butylamine, alcohols + nitric acid, aluminum carbide, ammonia + sulfuric acid, antimony, coal + peroxomonosulfuric acid, dichloromethylsilane, dimethyl sulfoxide, ethanol + sulfuric acid, glycerol, concentrated hydrofluoric acid, hydrogen peroxide, hydrogen trisulfide, hydroxylamine, carbon, organic nitro compounds, polypropylene, 3,4,4'-trimethyldiphenyl sulfone.

When heated to decomposition it emits toxic fumes of K_2O. See also PERMANGANATES.

PLP250 CAS:17014-71-0 HR: 3
POTASSIUM PEROXIDE
DOT: UN 1491
mf: K_2O_2 mw: 110.2

PROP: Yellow, amorph mass or white crystals or deliquescent colorless orthorhombic crystals. Mp: 490°.

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 5.1; *Label:* Oxidizer

SAFETY PROFILE: Dangerous fire hazard by spontaneous chemical reaction. It is a very

d Na_2O. See also

39-7 **HR: 3**

ite to brownish- heating into Na h H_2O. NaOH + : 0.9.

eported in EPA

: *Label.* Danger-

der ignites spon- : when exposed explosive reac- cinate + ethyl- dimethyl sulf Ignition or yformamide (a- uoropropionate. tible with acety- alogens, sulfur, unsuitable, use e. The commer- aces of sodium, on it emits toxic YDRIDES.

3-1 **HR: 3**
RIDE

orless rhombo- sol in water to

ORIDE ☐ SODI UM HYDROGEN

eported in EPA

/m³)/m³)/m³

l: Corrosive

is very toxic

to humans by ingestion; between 1 teaspoonful and 1 ounce may be fatal. Inhalation of dust may cause irritation to respiratory tract. Skin contact may result in irritation and ulceration; eye contact may cause burns. To fight fire, use water, foam, CO_2, dry chemicals. When heated to decomposition it emits toxic fumes of F⁻ and Na_2O. See also FLUORIDES and HYDROFLUORIC ACID.

SHR000 CAS:16721-80-5 HR: 3
SODIUM HYDROSULFIDE
DOT: UN 2318/NA 2922/NA 2949
mf: HNaS mw: 56.06

PROP: Colorless hexagonal crystals. Undergoes hexagonal to cubic transition. Mp: 350°. Very sol in H_2O; sol in EtOH.

SYNS: SODIUM BISULFIDE ☐ SODIUM HYDROGEN SULFIDE ☐ SODIUM HYDROSULFIDE, solution (NA 2922) (DOT) ☐ SODIUM HYDROSULFIDE, with < 25% water of crystallization (UN 2318) (DOT) ☐ SODIUM HYDROSULFIDE, with not < 25% water of crystallization (UN 2949) (DOT) ☐ SODIUM MERCAPTAN ☐ SODIUM MERCAPTIDE ☐ SODIUM SULFHYDRATE

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 8; *Label:* Corrosive. Poison (NA 2922); DOT Class: 4.2; *Label:* Spontaneously Combustible (UN 2318); DOT Class: 8; *Label:* Corrosive (UN 2949)

SAFETY PROFILE: Poison by intraperitoneal and subcutaneous routes. Mutation data reported. A corrosive irritant to skin, eyes, and mucous membranes. Flammable when exposed to heat or flame. Spontaneous combustion. Reacts violently with diazonium salts. Readily yields H_2S. When heated to decomposition it emits toxic fumes of SO_2 and Na_2O. See also SULFIDES and MERCAPTANS.

SHR500 CAS:7775-14-6 HR: 3
SODIUM HYDROSULPHITE
DOT: UN 1384
mf: $O_4S_2 \cdot 2Na$ mw: 174.10

PROP: White, colorless, or yellow-white crystals. Mp: >300°. Decomp in water (hot); sltly sol in cold water; insol in acids.

SYNS: D-ON ☐ HYDROLIN ☐ K-BRITE ☐ REDUCTONE ☐ SODIUM DITHIONITE (DOT) ☐ SODIUM HYDROSULFITE (DOT) ☐ SODIUM SULFOXYLATE ☐ VATROLITE ☐ V-BRITE ☐ VIRGHEM ☐ VIRTEX CC ☐ VIRTEX D ☐ VIRTEX L ☐ VIRTEX RD

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 4.2; *Label:* Spontaneously Combustible

SAFETY PROFILE: Toxic and an irritant. An allergen. Flammable when exposed to heat or flame. Ignites on contact with water or sodium chlorite. Decomposes violently when heated to 190° C and emits toxic fumes of SO_2 and Na_2O.

SHS000 CAS:1310-73-2 HR: 3
SODIUM HYDROXIDE
DOT: UN 1823/UN 1824
mf: HNaO mw: 40.00

PROP: White, pieces, lumps, sticks or deliquescent, orthorhombic powder. Undergoes polymorphic transition at 2°. Readily reacts with atm CO_2 forming Na_2CO_3. Mp: 323°, bp: 1390°, d: 2.120 @ 20°/4°, vap press: 1 mm @ 739°. Very sol in water and alc; insol in Et_2O, Me_2CO.

SYNS: CAUSTIC SODA ☐ CAUSTIC SODA, bead (DOT) ☐ CAUSTIC SODA, dry (DOT) ☐ CAUSTIC SODA, flake (DOT) ☐ CAUSTIC SODA, granular (DOT) ☐ CAUSTIC SODA, liquid (DOT) ☐ CAUSTIC SODA, solid (DOT) ☐ CAUSTIC SODA, solution (DOT) ☐ HYDROXYDE de SODIUM (FRENCH) ☐ LEWIS-RED DEVIL LYE ☐ LYE (DOT) ☐ NATRIUMHYDROXID (GERMAN) ☐ NATRIUMHYDROXYDE (DUTCH) ☐ SODA LYE ☐ SODIOIDROSSIDO di (ITALIAN) ☐ SODIUM HYDRATE (DOT) ☐ SODIUM HYDROXIDE, bead (DOT) ☐ SODIUM HYDROXIDE, dry (DOT) ☐ SODIUM HYDROXIDE, flake (DOT) ☐ SODIUM HYDROXIDE, granular (DOT) ☐ SODIUM HYDROXIDE, solid (DOT) ☐ SODIUM HYDROXYDE de (FRENCH) ☐ WHITE CAUSTIC

CONSENSUS REPORTS: Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

OSHA PEL: CL 2 mg/m³
ACGIH TLV: CL 2 mg/m³
DFG MAK: 2 mg/m³
NIOSH REL: (Sodium Hydroxide) CL 2 mg/m³/15M
DOT CLASSIFICATION: 8; *Label:* Corrosive

SAFETY PROFILE: Poison by intraperitoneal route. Moderately toxic by ingestion. Mutation data reported. A corrosive irritant to skin, eyes, and mucous membranes. This

materi marke tissue. ulcera pors, small ly cau tissue. to the with perfor dust o to the tissue. expos vary memb A s many handl emits

SHS5 SODI DOT: mf: H

PROF liquic

SYNS SODA HYDR ION

CONS TSCA List.

DOT

SAFE route rion skin. heart of N

SHU SOD mf:

CON com Kno

OSH

between 1 tea- be fatal. Inhala- tation to respira- result in irritation may cause burns. foam. CO_2, dry decomposition it d Na_2O. See also LUORIC ACID.

-80-6 HR: 3

IA 2949

crystals. Under- sition. Mp: 350°. OH.

DIUM HYDROGEN DE, solution (NA LFIDE, with <25% DT) □ SODIUM HY- f crystallization (UN N □ SODIUM MER-

ed in EPA

abel: Corrosive, ass: 8; Label: (UN 2318); ive (UN 2949)

intraperitoneal utation data re- skin, eyes, and able when ex- ntaneous com- ith diazonium hen heated to fumes of SO, and MERCAP-

-6 HR: 3

10

yellow-white in water (hot); in acids.

ITE □ REDUC-) □ SODIUM LUOXYLATE □

VATROLITE □ V-BRITE □ VIRCHEM □ VIRTEX CC □ VIRTEX D □ VIRTEX L □ VIRTEX RD

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 4.2; *Label:* Spontaneously Combustible

SAFETY PROFILE: Toxic and an irritant. An allergen. Flammable when exposed to heat or flame. Ignites on contact with water or sodium chlorite. Decomposes violently when heated to 190°C and emits toxic fumes of SO_x and Na_2O.

SHS000 CAS:1310-73-2 HR: 3
SODIUM HYDROXIDE
DOT: UN 1823/UN 1824
mf: HNaO mw: 40.00

PROP: White, pieces, lumps, sticks or deliquescent, orthorhombic powder. Undergoes polymorphic transition at 2°. Readily reacts with atm CO_2 forming Na_2CO_3. Mp: 323°, bp: 1390°, d: 2.120 @ 20°/4°, vap press: 1 mm @ 739°. Very sol in water and alc; insol in Et_2O, Me_2CO.

SYNS: CAUSTIC SODA □ CAUSTIC SODA, bead (DOT) □ CAUSTIC SODA, dry (DOT) □ CAUSTIC SODA, flake (DOT) □ CAUSTIC SODA, granular (DOT) □ CAUSTIC SODA, liquid (DOT) □ CAUSTIC SODA, solid (DOT) □ CAUSTIC SODA, solution (DOT) □ HYDROXYDE de SODIUM (FRENCH) □ LEWIS-RED DEVIL LYE □ LYE (DOT) □ NATRIUMHYDROXID (GERMAN) □ NATRIUMHYDROXYDE (DUTCH) □ SODA LYE □ SODIO(IDROSSIDO di) (ITALIAN) □ SODIUM HYDRATE (DOT) □ SODIUM HYDROXIDE, bead (DOT) □ SODIUM HYDROXIDE, dry (DOT) □ SODIUM HYDROXIDE, flake (DOT) □ SODIUM HYDROXIDE, granular (DOT) □ SODIUM HYDROXIDE, solid (DOT) □ SODIUM (HYDROXYDE de) (FRENCH) □ WHITE CAUSTIC

CONSENSUS REPORTS: Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

OSHA PEL: CL 2 mg/m³
ACGIH TLV: CL 2 mg/m³
DFG MAK: 2 mg/m³
NIOSH REL: (Sodium Hydroxide) CL 2 mg/m³/15M
DOT CLASSIFICATION: 8; *Label:* Corrosive

SAFETY PROFILE: Poison by intraperitoneal route. Moderately toxic by ingestion. Mutation data reported. A corrosive irritant to skin, eyes, and mucous membranes. This material, both solid and in solution, has a markedly corrosive action upon all body tissue, causing burns and frequently deep ulceration, with ultimate scarring. Mists, vapors, and dusts of this compound cause small burns, and contact with the eyes rapidly causes severe damage to the delicate tissue. Ingestion causes very serious damage to the mucous membranes or other tissues with which contact is made. It can cause perforation and scarring. Inhalation of the dust or concentrated mist can cause damage to the upper respiratory tract and to lung tissue, depending upon the severity of the exposure. Thus, effects of inhalation may vary from mild irritation of the mucous membranes to a severe pneumonitis.

A strong base. It can react violently with many substances. A dangerous material to handle. When heated to decomposition it emits toxic fumes of Na_2O.

SHS500 CAS:1310-73-2 HR: 3
SODIUM HYDROXIDE (liquid)
DOT: UN 1823/UN 1824
mf: HNaO mw: 40.00

PROP: Clear to slightly turbid, colorless liquid.

SYNS: CAUSTIC SODA, solution □ LYE, solution □ SODA LYE □ SODIUM HYDRATE, solution □ SODIUM HYDROXIDE, solution (FCC) □ WHITE CAUSTIC, solution

CONSENSUS REPORTS: Reported in EPA TSCA Inventory. Community Right-To-Know List.

DOT CLASSIFICATION: 8; *Label:* Corrosive

SAFETY PROFILE: Poison by intraperitoneal route. Moderately toxic by ingestion. Mutation data reported. A corrosive irritant to skin, eyes, and mucous membranes. When heated to decomposition it emits toxic fumes of Na_2O.

S

SHU000 CAS:138-85-2 HR: 3
SODIUM p-HYDROXYMERCURIBENZOATE
mf: $C_7H_5HgO_3 \cdot Na$ mw: 360.70

CONSENSUS REPORTS: Mercury and its compounds are on the Community Right-To-Know List. Reported in EPA TSCA Inventory.

OSHA PEL: CL 0.1 mg(Hg)/m³ (skin)

See also

HR: 3

SAFETY PROFILE: Poison by ingestion. Moderately toxic by intraperitoneal route. Experimental reproductive effects. Mutation data reported. When heated to decomposition it emits toxic fumes of NO_x. See also AMIDES.

INJ000 CAS:67-63-0 HR: 3
ISOPROPYL ALCOHOL
DOT: UN 1219
mf: C_3H_8O mw: 60.11

PROP: Clear, colorless liquid; slt odor, sltly bitter taste. Mp: −88.5 to −89.5°, bp: 82.5°, lel: 2.5%, uel: 12%, flash p: 53°F (CC), d: 0.7854 @ 20°/4°, refr index: 1.377 @ 20°, vap d: 2.0", ULC: 70, fp: −89.5°, autoign temp: 852°F. Misc with water, alc, ether, chloroform; insol in salt solns.

SYNS: ALCOOL ISOPROPILICO (ITALIAN) □ AL COOL ISOPROPYLIQUE (FRENCH) □ DIMETHYLCARBINOL □ ISOHOL □ ISOPROPANOL (DOT) □ ISO-PROPYLALKOHOL (GERMAN) □ LUTOSOL □ PETROHOL □ I PROPANOL (GERMAN) □ PROPAN-2-OL □ 2 PROPANOL □ sec-PROPYL ALCOHOL (DOT) □ i-PROPYLALKOHOL (GERMAN) □ SPECTRAR

CONSENSUS REPORTS: IARC Cancer Review: Group 3 IMEMDT 7,229,87. The isopropyl alcohol strong acid manufacturing process is on the Community Right-To-Know List. EPA Genetic Toxicology Program. Reported in EPA TSCA Inventory.

OSHA PEL: TWA 400 ppm; STEL 500 ppm
ACGIH TLV: TWA 400 ppm; STEL 500 ppm
DFG MAK: 400 ppm (980 mg/m³)
NIOSH REL: (Isopropyl Alcohol) TWA 400 ppm; CL 800 ppm/15M
DOT CLASSIFICATION: 3; *Label:* Flammable Liquid

SAFETY PROFILE: Moderately toxic to humans by an unspecified route. Moderately toxic experimentally by intravenous and intraperitoneal routes. Mildly toxic by skin contact. Human systemic effects by ingestion or inhalation: flushing, pulse rate decrease, blood pressure lowering, anesthesia, narcosis, headache, dizziness, mental depression, hallucinations, distorted perceptions, dyspnea, respiratory depression, nausea or vomiting, coma. Experimental teratogenic and reproductive effects. Mutation data reported. An eye and skin irritant. Questionable carcinogen.

The single lethal dose for a human adult is about 250 mL, although as little as 100 mL can be fatal. It can cause corneal burns and eye damage. Acts as a local respiratory irritant and in high concentration as a narcotic. It has good warning properties because it causes a mild irritation of the eyes, nose, and throat at a concentration level of 400 ppm. It may induce a mild narcosis, the effects of which are usually transient, and it is somewhat less toxic than the normal isomer, but twice as volatile.

Flammable liquid. A very dangerous fire hazard when exposed to heat, flame, or oxidizers. Moderately explosive when exposed to heat or flame. Reacts with air to form dangerous peroxides. It can react violently with many substances. To fight fire, use CO_2, dry chemical, alcohol foam. When heated to decomposition it emits acrid smoke and fumes. See also ALCOHOLS.

INK000 CAS:75-31-0 HR: 3
ISOPROPYLAMINE
DOT: UN 1221
mf: C_3H_9N mw: 59.13

PROP: Colorless liquid; amino odor. Mp: −101.2°, flash p: −35°F (OC), d: 0.694 @ 15°/4°, autoign temp: 756°F, d: 2.03, bp: 33-34°, lel: 2.3%, uel: 10.4%. Misc with water, alc, and ether.

SYNS: 2 AMINO PROPAN (DUTCH) □ 2-AMINOPROPAN (GERMAN) □ 2-AMINOPROPANE □ 2-AMINOPROPANO (ITALIAN) □ ISOPROPILAMINA (ITALIAN) □ 1-METHYLETHYLAMINE □ MONOISOPROPYLAMINE □ 2-PROPANAMINE □ see PROPYLAMINE □ 2 PROPYLAMINE

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: TWA 5 ppm; STEL 10 ppm
ACGIH TLV: TWA 5 ppm; STEL 10 ppm
DFG MAK: 5 ppm (12 mg/m³)
DOT CLASSIFICATION: 3; *Label:* Flammable Liquid; DOT Class: 3; *Label:* Flammable Liquid, Corrosive

SAFETY PROFILE: Poison by skin contact. Moderately toxic by ingestion. Mildly toxic by inhalation. A severe skin and eye irritant. Occasionally contact causes sensitization. Narcotic in high concentration. Very dangerous fire hazard and moderate explosion hazard when exposed to sparks, heat, flame, or oxidizers

INN400
N-ISOPROP
mf: $C_6H_{13}NC$

PROP: Oil.
H_2O.

SYNS: ETHA
(ISOPROPYLAM
ETHYL)AMINO,
PYLAMINE □ I-
PROPYLAMINO,
MINE □ MONO

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INT000
α-((ISOPRO
THALENE
RIDE
mf: $C_{15}H_{19}N$

PROP: Cry.
184°.

SYNS: ALDE
I.C.I. HYDROC
AMINO-1-(2-N
□ α-(((1-METH
THALENEMETH
THYLISOPROPY
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□ SULMET □ SULPHADIMETHYLPYRIMIDINE □ SULPHADIMIDINE □ SUPERSEPTIL □ VERTOLAN

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

SAFETY PROFILE: Moderately toxic by intravenous and intraperitoneal routes. Experimental teratogenic and reproductive effects. Questionable carcinogen with experimental tumorigenic data. When heated to decomposition it emits very toxic fumes of SO_x and NO_x.

SNK000 CAS:723-46-6 HR: 3
SULFAMETHOXAZOL
mf: $C_{10}H_{11}N_3O_3S$ mw: 253.30

PROP: Yellowish-white powder. Mp: 169–173°. Insol in Et_2O.

SYNS: 4-AMINO-N-(5-METHYL-3-ISOXAZOLYL)BENZENESULFONAMIDE □ 4-(p-AMINOPHENYLSULPHONAMIDO)-5-METHYLISOXAZOLE □ AZO GANTANOL □ BACTRIM □ CO-TRIMOXAZOLE □ ELSAPRIM □ FECTRIM □ GANTANOL □ N1-(5-METHYL-3-ISOXAZOLE) SULFANILAMIDE □ N1-(5-METHYL-3-ISOXAZOLYL)SULFANILAMIDE □ N1-(5-METHYLISOXAZOL-3-YL)SULPHANILAMIDE □ N1-(5-METHYL-3-ISOXAZOLYL)SULPHANILAMIDE □ 5-METHYL-3-SULFANILAMIDOISOXAZOLE □ 5-METHYL-3-SULPHANILAMIDOISOXAZOLE □ METOXAL □ MS 53 □ RADONIL □ RO 4-2130 □ SINOMIN □ SEPTRA □ SEPTRAN □ SIM □ SULFAMETHALAZOLE □ SULFAMETHOXAZOLE □ SULFAMETHYLISOXAZOLE □ 3-SULFANILAMIDO-5-METHYLISOXAZOLE □ SULFISOMEZOLE □ SULPHAMETHALAZOLE □ SULPHAMETHOXAZOL □ SULPHAMETHOXAZOLE □ SULPHAMETHYLISOXAZOLE □ 4-SULPHANILAMIDO-5-METHYLISOXAZOLE □ SULPHISOMEZOLE □ TRIB □ TRIMETOPRIM-SULFA

CONSENSUS REPORTS: IARC Cancer Review: Group 3 IMEMDT 7,348,87; Human Inadequate Evidence IMEMDT 24,285,80; Animal Limited Evidence IMEMDT 24,285,80 Reported in EPA TSCA Inventory.

SAFETY PROFILE: Moderately toxic by ingestion and intraperitoneal routes. Questionable carcinogen with experimental tumorigenic data. When heated to decomposition it emits very toxic fumes of NO_x and SO_x.

SNK500 CAS:5329-14-6 HR: 3
SULFAMIC ACID
DOT: UN 2967
mf: H_3NO_3S mw: 97.10

PROP: White crystals; nonhygroscopic solid. Mp: 200° (decomp), bp: decomp, d: 203 @ 12°. Very sol in H_2O, liq NH_3, formamide.

SYNS: AMIDOSULFONIC ACID □ AMIDOSULFURIC ACID □ AMINOSULFONIC ACID □ KYSELINA AMIDOSULFONOVA (CZECH) □ KYSELINA SULFAMINOVA (CZECH) □ SULFAMIDIC ACID □ SULPHAMIC ACID (DOT)

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 8; *Label:* Corrosive

SAFETY PROFILE: Poison by intraperitoneal route. Moderately toxic by ingestion. A human skin irritant. A corrosive irritant to skin, eyes, and mucous membranes. A substance that migrates to food from packaging materials. Violent or explosive reactions with chlorine, metal nitrates + heat, metal nitrites + heat, fuming HNO_3. When heated to decomposition it emits very toxic fumes of SO_x and NO_x. See also SULFONATES.

SNM500 CAS:63-74-1 HR: 3
SULFANILAMIDE
mf: $C_6H_8N_2O_2S$ mw: 172.22

PROP: Crystals or leaflets from alc (aq). Mp: 164.5–166.5°. Sol in glycerin, propylene glycol, HCl; almost insol in chloroform, ether, benzene, pet ether.

SYNS: ALBENAN □ ALBOSAL □ AMBESIDE □ p-AMINOBENZENESULFAMIDE □ p-AMINOBENZENESULFONAMIDE □ 4-AMINOBENZENESULFONAMIDE □ p-AMINOPHENYLSULFONAMIDE □ 4-AMINOPHENYLSULFONAMIDE □ p-ANILINESULFONAMIDE □ ANILINE p-SULFONIC AMIDE □ ANTISTREPT □ BACTERAMID □ COLLOMIDE □ COLSULANYDE □ COPTICIDE □ DIPRON □ ESTREPTOCIDA □ F 1162 □ FOURNEAU 1162 □ GERISON □ GOMBARDOL □ LUSIL □ LYSOCOCCINE □ NEOCOCCYL □ ORGASEPTINE □ PARS □ FRONTALBIN □ PRONTOSIL I □ PROSEPTINE □ PROSEPTOL □ PYSOCOCCINE □ RUBIAZOL A □ SEPTAMIDE ALBUM □ SEPTINAL □ SEPTOPLEX □ STOPTON ALBUM □ STREPAMIDE □ STREPTAGOL □ STREPTOCLASE □ STREPTOL □ STREPTOSIL □ STREPTOZONE □ STREPTROCIDE □ p-SULFAMIDOANILINE □ SULFAMIDYL □ SULFANA □ SULFANALONE □ SULFANIL □ SULFOCIDINE □ SUL-

Mutation data reported. When heated to decomposition it emits toxic fumes of NO_x.

MJP400 CAS:101-68-8 HR: 3
METHYLENE BISPHENYL ISOCYANATE
DOT: UN 2489
mf: $C_{15}H_{10}N_2O_2$ mw: 250.27

PROP: Crystals or yellow fused solid. Mp: 37.2°, bp: 184° @ 3 mm, d: 1.19 @ 50°, vap press: 0.001 mm @ 40°.

SYNS: BIS(p ISOCYANATOPHENYL)METHANE ☐ BIS (4,4-ISOCYANATOPHENYL)METHANE ☐ BIS(4-ISOCYANATOPHENYL)METHANE ☐ CARADATE 30 ☐ DESMODUR 44 ☐ DIFENIL METAN DIISOCIANATO (ITALIAN) ☐ DIFENYLMETHAAN DIISSOCYANAAT (DUTCH) ☐ 4,4'-DIISOCYANATE de DIPHENYLMETHANE (FRENCH) ☐ 4,4' DIISOCYANATODIPHENYLMETHANE ☐ DIPHENYLMETHAN 4,4' DISOCYANAT (GERMAN) ☐ DIPHENYL METHANE DIISOCYANATE ☐ p,p' DIPHENYLMETHANE DIISOCYANATE ☐ 4,4'-DIPHENYL METHANE DIISOCYANATE ☐ DIPHENYLMETHANE 4,4' DIISOCYANATE (DOT) ☐ HYLENE M50 ☐ ISONATE ☐ MDI ☐ METHYLENEBIS(4-ISOCYANATOBENZENE) ☐ 1,1 METHYLENEBIS(4 ISOCYANATOBENZENE) ☐ METHYLENEBIS(p-PHENYLENE ISOCYANATE) ☐ METHYLENEBIS(4-PHENYLENE ISOCYANATE) ☐ p,p' METHYLENEBIS(PHENYL ISOCYANATE) ☐ METHYLENEBIS(p PHENYL ISOCYANATE) ☐ METHYLENEBIS(4-PHENYL ISOCYANATE) ☐ 4,4' METHYLENEBIS(PHENYL ISOCYANATE) ☐ 4,4' METHYLENEDIPHENYL DIISOCYANATE ☐ METHYLENEDI p-PHENYLENE DIISOCYANATE ☐ METHYLENEDI p PHENYLENE ISOCYANATE ☐ 4,4' METHYLENEDIPHENYLENE ISOCYANATE ☐ METHYLENE DI PHENYLENE ISOCYANATE (DOT) ☐ 4,4' METHYLENEDIPHENYL ISOCYANATE ☐ NACCONATE 300 ☐ NCI-C50608 ☐ RUBINATE 44

CONSENSUS REPORTS: IARC Cancer Review: Group 3 IMEMDT 7,56,87. Reported in EPA TSCA Inventory. Community Right-To-Know List.

OSHA PEL: CL 0.02 ppm
ACGIH TLV: 0.005 ppm
DFG MAK: 0.005 ppm (0.05 mg/m³); Suspected Carcinogen
NIOSH REL: (Diisocyanates) TWA 0.005 ppm; CL 0.02 ppm/10M
DOT CLASSIFICATION: 6.1; *Label:* KEEP AWAY FROM FOOD; DOT Class: 6.1; *Label:* Poison; DOT Class: 6.1; *Label:* Poison, Flammable Liquid; DOT Class: 3; *Label:* Flammable Liquid, Poison

SAFETY PROFILE: Poison by inhalation. Mildly toxic by ingestion. Human systemic effects by inhalation: increased immune response and body temperature. A skin and eye irritant. An allergic sensitizer. Questionable carcinogen. Mutation data reported. A flammable liquid. When heated to decomposition it emits toxic fumes of NO_x and SO_x. See also CYANATES.

MJP450 CAS:75-09-2 HR: 3
METHYLENE CHLORIDE
DOT: UN 1593
mf: CH_2Cl_2 mw: 84.93

PROP: Colorless, volatile liquid; odor of chloroform. Bp: 39.8°, lel: 15.5% in O_2, uel: 66.4% in O_2, fp: −96.7°, d: 1.326 @ 20°/4°, autoign temp: 1139°F, vap press: 380 mm @ 22°, vap d: 2.93, refr index: 1.424 @ 20 L. Sol in water; misc with alc, acetone, chloroform, ether, and carbon tetrachloride.

SYNS: AEROTHENE MM ☐ CHLORURE de METHYLENE (FRENCH) ☐ DCM ☐ DICHLOROMETHANE (MAK, DOT) ☐ FREON 30 ☐ METHANE DICHLORIDE ☐ METHYLENE BICHLORIDE ☐ METHYLENE DICHLORIDE ☐ METYLENU CHLOREK (POLISH) ☐ NCI-C50102 ☐ R 30 ☐ RCRA WASTE NUMBER U080 ☐ SOLAESTHIN ☐ SOLMETHINE

CONSENSUS REPORTS: NTP 7th Annual Report On Carcinogens. IARC Cancer Review: Group 2B IMEMDT 7,19-48; Human Inadequate Evidence IMEMDT 41, 43,86; Animal Sufficient Evidence IMEMDT 41-43,86; Animal Inadequate Evidence IMEMDT 20,449,79. NTP Carcinogenesis Studies (Inhalation): Clear Evidence: mouse, rat NTPTR* NTP-TR-306,86. Reported in EPA TSCA Inventory, EPA Genetic Toxicology Program, Community Right-To-Know List.

OSHA PEL: (Proposed: STEL 126 ppm, 15 min)
ACGIH TLV: TWA 50 ppm, Suspected Human Carcinogen
DFG MAK: 100 ppm (360 mg/m³); BAT: 5% CO-Hb in blood at end of shift; Suspected Carcinogen
NIOSH REL: (Methylene Chloride) Reduce to lowest feasible level
DOT CLASSIFICATION: 6.1; *Label:* KEEP AWAY FROM FOOD

SAFETY PROFILE: Confirmed carcinogen with experimental carcinogenic and tumorigenic data. Poison by intravenous route. Moderately toxic by ingestion, subcutaneous,

and intraperitoneal routes. Mildly toxic by inhalation. Human systemic effects by ingestion and inhalation: paresthesia, somnolence, altered sleep time, convulsions, euphoria, and change in cardiac rate. An experimental teratogen. Experimental reproductive effects. An eye and severe skin irritant. Human mutation data reported. It is flammable in the range of 12–19% in air but ignition is difficult. It will not form explosive mixtures with air at ordinary temperatures. Mixtures in air with methanol vapor are flammable. It will form explosive mixtures with an atmosphere having a high oxygen content, in liquid O_2, N_2O_4, K, Na, NaK. Explosive in the form of vapor when exposed to heat or flame. Reacts violently with Li, NaK, potassium-tert-butoxide, (KOH + N-methyl-N-nitrosourea). It can be decomposed by contact with hot surfaces and open flame, and then yield toxic fumes that are irritating and give warning of their presence. When heated to decomposition it emits highly toxic fumes of phosgene and Cl. See also CHLORINATED HYDROCARBONS, ALIPHATIC.

MJP750 CAS:1208-52-2 HR: 3
2,4'-METHYLENEDIANILINE
mf: $C_{13}H_{14}N_2$ mw: 198.29

PROP: Leaflets from C_6H_6. Mp: 88–89°, bp: 222° @ 9 mm.

SYNS: 2',4-BIS(AMINOPHENYL)METHANE ☐ 2,4' DIAMINODIPHENYLMETHAN (GERMAN) ☐ o,p'-DIAMINODIPHENYLMETHANE ☐ 2,4' DIAMINODIPHENYLMETHANE ☐ 2,4'-DIPHENYLMETHANE DIAMINE ☐ 2,4'-METHYLENEBIS(ANILINE)

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DFG MAK: Animal Carcinogen. Suspected Human Carcinogen

SAFETY PROFILE: Suspected carcinogen. Moderately toxic by subcutaneous route. When heated to decomposition it emits toxic fumes of NO_x.

MJQ000 CAS:101-77-9 HR: 3
4,4'-METHYLENEDIANILINE
DOT: UN 2651
mf: $C_{13}H_{14}N_2$ mw: 198.29

PROP: Tan flakes, lumps, or pearly leaflets from benzene; faint amine-like odor. Mp: 93°, flash p: 440°F, bp: 232° @ 9 mm.

SYNS: 4-(4-AMINOBENZYL)ANILINE ☐ ANCAMINE TL ☐ ARALDITE HARDENER 972 ☐ BENZENAMINE, 4,4'-METHYLENEBIS- ☐ BIS-p-AMINOFENYLMETHAN ☐ BIS(p-AMINOPHENYL)METHANE ☐ BIS(4-AMINOPHENYL)METHANE ☐ CURITHANE ☐ DADPM ☐ DAPM ☐ DDM ☐ p,p'-DIAMINODIFENYLMETHAN ☐ 4,4' DIAMINODIPHENYLMETHAN ☐ DIAMINODIPHENYLMETHANE ☐ p,p'-DIAMINODIPHENYLMETHANE ☐ 4,4' DIAMINODIPHENYLMETHANE ☐ 4,4'-DIAMINODIPHENYLMETHANE (DOT) ☐ DI-(4-AMINOPHENYL) METHANE ☐ DIANILINOMETHANE ☐ 4,4' DIPHENYLMETHANEDIAMINE ☐ EPICURE DDM ☐ EPIKURE DDM ☐ HT 972 ☐ JEFFAMINE AP-20 ☐ MDA ☐ METHYLENEBIS(ANILINE) ☐ 4,4'-METHYLENEBISANILINE ☐ 4,4'-METHYLENEBIS(BENZENEAMINE) ☐ METHYLENEDIANILINE ☐ p,p'-METHYLENEDIANILINE ☐ 4,4'-METHYLENEDIANILINE (ACGIH) ☐ SUMICURE M ☐ TONOX

CONSENSUS REPORTS: NTP 7th Annual Report On Carcinogens. IARC Cancer Review: Group 2B IMEMDT 7,56,87; Animal Sufficient Evidence IMEMDT 39,34,86; Animal Inadequate Evidence IMEMDT 4,79. 74. Community Right-To-Know List. Reported in EPA TSCA Inventory.

ACGIH TLV: TWA 0.1 ppm (skin); Suspected Human Carcinogen
DFG MAK: Animal Carcinogen. Suspected Human Carcinogen
DOT CLASSIFICATION: 6.1; *Label:* KEEP AWAY FROM FOOD

SAFETY PROFILE: Confirmed carcinogen with experimental tumorigenic data. Human poison by ingestion. Poison by subcutaneous and intraperitoneal routes. Human systemic effects by ingestion: rigidity, jaundice, other liver changes. An eye irritant. Mutation data reported. It is not rapidly absorbed through the skin. Combustible when exposed to heat or flame. When heated to decomposition it emits highly toxic fumes of aniline and NO_x.

MJQ100 CAS:13552-44-8 HR: 3
4,4'-METHYLENEDIANILINE DIHYDROCHLORIDE
mf: $C_{13}H_{14}N_2 \cdot 2ClH$ mw: 271.21

SYNS: BENZENAMINE, 4,4'-METHYLENEBIS-, DIHYDROCHLORIDE ☐ p,p' METHYLENEDIANILINE DIHYDROCHLORIDE ☐ NCI-C54604

CONSENSUS REPORTS: NTP 7th Annual Report On Carcinogens. IARC Cancer

PCF275 CAS:127-18-4 HR: 3
PERCHLOROETHYLENE
DOT: UN 1897
mf: C_2Cl_4 mw: 165.82

PROP: Colorless liquid; chloroform-like odor. Mp: −23.35°, fp: −22.35°, bp: 121.20°, d: 1.6311 @ 15°/4°, vap press: 15.8 mm @ 22°, vap d: 5.83.

SYNS: ANKILOSTIN ☐ ANTISOL 1 ☐ CARBON BICHLORIDE ☐ CARBON DICHLORIDE ☐ CZTERO-CHLOROETYLEN (POLISH) ☐ DIDAKENE ☐ DOWPER ☐ ENT 1,460 ☐ ETHYLENE TETRACHLORIDE ☐ FEDAL-UN ☐ NCI-C04360 ☐ NEMA ☐ PERAWIN ☐ PERCHLOORETHYLEEN, PER (DUTCH) ☐ PERCHLOR ☐ PERCHLORAETHYLEN, PER (GERMAN) ☐ PERCHLORETHYLENE ☐ PERCHLORETHYLENE, PER (FRENCH) ☐ PERCLENE ☐ PERCLOROETILENE (ITALIAN) ☐ PERCOSOLVE ☐ PERK ☐ PERKLONE ☐ PERSEC ☐ RCRA WASTE NUMBER U210 ☐ TETLEN ☐ TETRACAP ☐ TETRACHLOORETHEEN (DUTCH) ☐ TETRACHLORAETHEN (GERMAN) ☐ TETRACHLOROETHENE ☐ TETRACHLOROETHYLENE (DOT) ☐ 1,1,2,2 TETRACHLOROETHYLENE ☐ TETRACLORO-ETENE (ITALIAN) ☐ TETRALENO ☐ TETRALEX ☐ TETRAVEC ☐ TETROGUER ☐ TETROPIL

CONSENSUS REPORTS: NTP 7th Annual Report On Carcinogens. IARC Cancer Review: Group 2B IMEMDT 7,355,87; Animal Limited Evidence IMEMDT 20,491, 79. NCI Carcinogenesis Bioassay (gavage): Clear Evidence: mouse NCITR* NCI-CG-TR-13,77 (inhalation); Clear Evidence: mouse, rat NTPTR* NTP-TR-311,86 (gavage); Inadequate Studies: rat NCITR* NCI-CG-TR-13,77. Reported in EPA TSCA Inventory. EPA Generic Toxicology Program. Community Right-To-Know List.

OSHA PEL: TWA 25 ppm
ACGIH TLV: TWA 50 ppm; STEL 200 ppm (Proposed: TWA 25 ppm; Animal Carcinogen); BEI: 7 mg/L trichloroacetic acid in urine at end of work week
DFG MAK: 50 ppm (345 mg/m³); BAT: blood 100 µg/dL
NIOSH REL: (Tetrachloroethylene) Minimize workplace exposure
DOT CLASSIFICATION: 6.1; *Label:* KEEP AWAY FROM FOOD

SAFETY PROFILE: Confirmed carcinogen with experimental carcinogenic, neoplastigenic, and teratogenic data. Experimental poison by intravenous route. Moderately toxic to humans by inhalation, with the following effects: local anesthetic, conjunctiva irritation, general anesthesia, hallucinations, distorted perceptions, coma, and pulmonary changes. Moderately experimentally toxic by ingestion, inhalation, intraperitoneal, and subcutaneous routes. An experimental teratogen. Experimental reproductive effects. Human mutation data reported. An eye and severe skin irritant. The liquid can cause injuries to the eyes; however, with proper precautions it can be handled safely. The symptoms of acute intoxication from this material are the result of its effects upon the nervous system. Can cause dermatitis, particularly after repeated or prolonged contact with the skin. Irritates the gastrointestinal tract upon ingestion. It may be handled in the presence or absence of air, water, and light with any of the common construction materials at temperatures up to 140°. This material is extremely stable and resists hydrolysis. A common air contaminant. Reacts violently under the proper conditions with Ba, Be, Li, N_2O_4, metals, NaOH. When heated to decomposition it emits highly toxic fumes of Cl^-. See also CHLORINATED HYDROCARBONS, ALIPHATIC.

PCF300 CAS:594-42-3 HR: 3
PERCHLOROMETHYL MERCAPTAN
DOT: UN 1670
mf: CCl_4S mw: 185.87

PROP: Yellow, oily liquid. Bp: slt decomp @ 149°, d: 1.700 @ 20°, vap d: 6.414.

SYNS: CLAIRSIT ☐ MERCAPTAN METHYLIQUE PERCHLORE (FRENCH) ☐ PCM ☐ PERCHLORMETHYL MERKAPTAN (CZECH) ☐ RCRA WASTE NUMBER P118 ☐ TRICHLOROMETHANE SULFENYL CHLORIDE ☐ TRICHLOROMETHYLSULFENYL CHLORIDE ☐ TRICHLOROMETHYLSULPHENYL CHLORIDE

CONSENSUS REPORTS: EPA Extremely Hazardous Substances List. Reported in EPA TSCA Inventory.

OSHA PEL: TWA 0.1 ppm
ACGIH TLV: TWA 0.1 ppm
DOT CLASSIFICATION: 6.1; *Label:* Poison

SAFETY PROFILE: Poison by ingestion, inhalation, and intravenous routes. A severe skin, eye, and mucous membrane irritant. When heated to decomposition it emits very toxic fumes of Cl^- and SO_x. See also MERCAPTANS.

J Na_2O. See also

19-7 HR: 3

te to brownish- heating into Na H_2O. NaOH + 0.9.

eported in EPA

Label: Danger-

er Ignites spon- when exposed sive rete- – ethyl- dimethyl sulf- e. Ignition or formamide (a- oropropionate. ible with acety- logens, sulfur. unsuitable, use The commer- ces of sodium. n it emits toxic DRIDES.

-1 HR: 3
IDE

rless rhombo- ol in water to

ORIDE ☐ SODI- HYDROGEN

orted in EPA

m³

bel: Corrosive

l is very toxic

to humans by ingestion; between 1 teaspoonful and 1 ounce may be fatal. Inhalation of dust may cause irritation to respiratory tract. Skin contact may result in irritation and ulceration; eye contact may cause burns. To fight fire, use water, foam, CO_2, dry chemicals. When heated to decomposition it emits toxic fumes of F and Na_2O. See also FLUORIDES and HYDROFLUORIC ACID.

SHR000 CAS:16721-80-5 HR: 3
SODIUM HYDROSULFIDE
DOT: UN 2318/NA 2922/NA 2949
mf: HNaS mw: 56.06

PROP: Colorless hexagonal crystals. Undergoes hexagonal to cubic transition. Mp: 350° Very sol in H_2O; sol in EtOH.

SYNS: SODIUM BISULFIDE ☐ SODIUM HYDROGEN SULFIDE ☐ SODIUM HYDROSULFIDE, solution (NA 2922) (DOT) ☐ SODIUM HYDROSULFIDE, with < 25% water of crystallization (UN 2318) (DOT) ☐ SODIUM HYDROSULFIDE, with ≥ 25% water of crystallization (UN 2949) (DOT) ☐ SODIUM MERCAPTAN ☐ SODIUM MERCAPTIDE ☐ SODIUM SULFHYDRATE

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 8; *Label:* Corrosive, Poison (NA 2922); DOT Class: 4.2; *Label:* Spontaneously Combustible (UN 2318); DOT Class: 8; *Label:* Corrosive (UN 2949)

SAFETY PROFILE: Poison by intraperitoneal and subcutaneous routes. Mutation data reported. A corrosive irritant to skin, eyes, and mucous membranes. Flammable when exposed to heat or flame. Spontaneous combustion. Reacts violently with diazonium salts. Readily yields H_2S. When heated to decomposition it emits toxic fumes of SO and Na_2O. See also SULFIDES and MERCAPTANS

SHR500 CAS:7775-14-6 HR: 3
SODIUM HYDROSULPHITE
DOT: UN 1384
mf: $O_4S_2Na_2$ mw: 174.10

PROP: White, colorless, or yellow-white crystals. Mp: >300°. Decomp in water (hot); sltly sol in cold water; insol in acids.

SYNS: D-OX ☐ HYDROLIN ☐ K-BRITE ☐ REDUCTONE ☐ SODIUM DITHIONITE (DOT) ☐ SODIUM HYDROSULFITE (DOT) ☐ SODIUM SULFOXYLATE ☐ VATROLITE ☐ V-BRITE ☐ VIRGHEM ☐ VIRTEX CC ☐ VIRTEX D ☐ VIRTEX L ☐ VIRTEX RD .

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 4.2; *Label:* Spontaneously Combustible

SAFETY PROFILE: Toxic and an irritant. An allergen. Flammable when exposed to heat or flame. Ignites on contact with water or sodium chlorite. Decomposes violently when heated to 190°C and emits toxic fumes of SO and Na_2O.

SHS000 CAS:1310-73-2 HR: 3
SODIUM HYDROXIDE
DOT: UN 1823/UN 1824
mf: HNaO mw: 40.00

PROP: White, pieces, lumps, sticks or deliquescent, orthorhombic powder. Undergoes polymorphic transition at 2°. Readily reacts with atm CO forming Na_2CO_3. Mp: 323°, bp: 1390°, d: 2.120 @ 20°/4°, vap press: 1 mm @ 739°. Very sol in water and alc; insol in Et_2O, Me_2CO.

SYNS: CAUSTIC SODA ☐ CAUSTIC SODA, bead (DOT) ☐ CAUSTIC SODA, dry (DOT) ☐ CAUSTIC SODA, flake (DOT) ☐ CAUSTIC SODA, granular (DOT) ☐ CAUSTIC SODA, liquid (DOT) ☐ CAUSTIC SODA, solid (DOT) ☐ CAUSTIC SODA, solution (DOT) ☐ HYDROXYDE de SODIUM (FRENCH) ☐ LEWIS-RED DEVIL LYE ☐ LYE (DOT) ☐ NATRIUMHYDROXID (GERMAN) ☐ NATRIUMHYDROXYDE (DUTCH) ☐ SODA LYE ☐ SODIDIDROSSIDO di (ITALIAN) ☐ SODIUM HYDRATE (DOT) ☐ SODIUM HYDROXIDE, bead (DOT) ☐ SODIUM HYDROXIDE, dry (DOT) ☐ SODIUM HYDROXIDE, flake (DOT) ☐ SODIUM HYDROXIDE, granular (DOT) ☐ SODIUM HYDROXIDE, solid (DOT) ☐ SODIUM HYDROXYDE de (FRENCH) ☐ WHITE CAUSTIC

CONSENSUS REPORTS: Reported in EPA TSCA Inventory. EPA Generic Toxicology Program.

OSHA PEL: CL 2 mg/m³
ACGIH TLV: CL 2 mg/m³
DFG MAK: 2 mg/m³
NIOSH REL: (Sodium Hydroxide) CL 2 mg/m³/15M
DOT CLASSIFICATION: 8; *Label:* Corrosive

SAFETY PROFILE: Poison by intraperitoneal route. Moderately toxic by ingestion. Mutation data reported. A corrosive irritant to skin, eyes, and mucous membranes. This

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SHS5 SODI DOT: mf: H

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SYNS SODA HYDR tion

CONS TSCA List.

DOT

SAFE route tion skin. heate of N..

SHU0 SODI mf: C

CONS comp Know

OSHA

CLJ750 CAS:2812-73-9 HR: 3
CHLOROTHIOFORMIC ACID ETHYL ESTER
DOT: UN 2826
mf: C_3H_5ClOS mw: 124.59

PROP: Bp: 52–55° @ 40 mm.

SYN: ETHYL CHLOROTHIOFORMATE (DOT)

DOT CLASSIFICATION: 8; *Label:* Corrosive, Poison

SAFETY PROFILE: Probably a poison by inhalation and ingestion. A corrosive irritant to skin, eyes, and mucous membranes. See also ESTERS and CHLORIDES. Flammable when exposed to heat or flame. When heated to decomposition it emits very toxic fumes of Cl^- and SO_x.

CLK100 CAS:95-49-8 HR: 3
o-CHLOROTOLUENE
DOT: UN 2238
mf: C_7H_7Cl mw: 126.59

PROP: Liquid. Mp: −34°, bp: 159°, d: 1.08 @ 20°/4°. Volatile with steam. Slly sol in water; freely sol in alc, benzene, chloroform, ether.

SYNS: 2-CHLORO-1 METHYLBENZENE (9CI) ☐ 2-CHLOROTOLUENE ☐ HALSO 99 ☐ 1-METHYL-2-CHLOROBENZENE ☐ 2-METHYLCHLOROBENZENE ☐ o-TOLYL CHLORIDE

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: TWA 50 ppm
ACGIH TLV: TWA 50 ppm
DOT CLASSIFICATION: 3; *Label:* Flammable Liquid

SAFETY PROFILE: Moderately toxic by unspecified routes. Flammable when exposed to heat or flame. When heated to decomposition it emits toxic fumes of Cl^-. See also TOLYL CHLORIDE and CHLORINATED HYDROCARBONS, AROMATIC.

CLK130 CAS:25168-05-2 HR: 3
CHLOROTOLUENES
DOT: UN 2238
mf: C_7H_7Cl mw: 126.59

SYNS: BENZENE, CHLOROMETHYL-(9CI) ☐ CHLOROMETHYLBENZENE ☐ CHLOROTOLUENE ☐ ar-CHLOROTOLUENE ☐ TOLUENE, ar-CHLORO-

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 3; *Label:* Flammable Liquid

SAFETY PROFILE: Low toxicity by inhalation. A flammable liquid. When heated to decomposition it emits toxic vapors of Cl^-.

CLK220 CAS:95-69-2 HR: 3
4-CHLORO-o-TOLUIDINE
mf: C_7H_8ClN mw: 141.61

PROP: Leaflets from EtOH. Mp: 29–30°, bp: 236–238° @ 730 mm.

SYNS: AMARTHOL FAST RED TR BASE ☐ 2-AMINO-5-CHLOROTOLUENE ☐ AZOENE FAST RED TR BASE ☐ AZOGENE FAST RED TR ☐ AZOIC DIAZO COMPONENT 11 BASE ☐ BRENTAMINE FAST RED TR BASE ☐ 5-CHLORO-2-AMINOTOLUENE ☐ 4-CHLORO-2-METHYLANILINE ☐ 4-CHLORO-6-METHYLANILINE ☐ 4-CHLORO-2-METHYLBENZENEAMINE ☐ 4-CHLORO-2-TOLUIDINE ☐ DAITO RED BASE TR ☐ DEVAL RED K ☐ DEVAL RED TR ☐ DIAZO FAST RED TRA ☐ FAST RED BASE TR ☐ FAST RED SCT BASE ☐ FAST RED TR ☐ FAST RED TR11 ☐ FAST RED TR BASE ☐ FAST RED TRO BASE ☐ KAKO RED TR BASE ☐ KAMBAMINE RED TR ☐ 2-METHYL-4-CHLOROANILINE ☐ MITSUI RED TR BASE ☐ RED BASE CIBA IX ☐ RED BASE IRGA IX ☐ RED BASE NTR ☐ RED TR BASE ☐ SANYO FAST RED TR BASE ☐ TULABASE FAST RED TR

CONSENSUS REPORTS: IARC Cancer Review: Group 2A IMEMDT 7,56,87; Human Inadequate Evidence IMEMDT 16,277,78; Animal Sufficient Evidence IMEMDT 30,61, 83. Reported in EPA TSCA Inventory.

DFG MAK: Human Carcinogen
DOT CLASSIFICATION: 6.1; *Label:* KEEP AWAY FROM FOOD

SAFETY PROFILE: Confirmed carcinogen. Poison by ingestion and subcutaneous routes. Human mutation data reported. In the presence of copper(II) chloride catalyst decomposition occurs above 239°C. When heated to decomposition it emits toxic fumes of Cl^- and NO_x. See also other chloro toluidine entries.

17 7 0011

2-BIPHENYL

BFX500 CAS:103-29-7 HR: 3
BIBENZYL
mf: $C_{14}H_{14}$ mw: 182.28

PROP: Flash p: 264°F, autoign temp: 896°F, d: 1.0, vap d: 6.29, bp: 284°, mp: 52°.

SYNS: DIBENZYL ☐ 1,2-DIPHENYLETHANE

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

SAFETY PROFILE: Poison by intravenous route. Moderately toxic by intraperitoneal route. Combustible. To fight fire, use water, spray, mist, alcohol foam, dry chemical. When heated to decomposition it emits acrid smoke and fumes.

BGA750 CAS:1464-53-5 HR: 3
1,1'-BI(ETHYLENE OXIDE)
mf: $C_4H_8O_2$ mw: 86.10

PROP: Colorless liquid. Bp: 142°, mp: 19°, d: 1.113 @ 18°/4°.

SYNS: BIOXIRANE ☐ 1,1'-BIOXIRANE ☐ BUTADIENDIOXYD (GERMAN) ☐ BUTADIENE DIEPOXIDE ☐ 1,3-BUTADIENE DIEPOXIDE ☐ BUTADIENE DIOXIDE ☐ BUTANE DIEPOXIDE ☐ DEB ☐ DIEPOXYBUTANE ☐ 1,4-DIEPOXYBUTANE ☐ 1,2,3,4-DIEPOXYBUTANE ☐ DIOXYBUTADIENE ☐ ENT 26,592 ☐ ERYTHRITOL ANHYDRIDE ☐ RCRA WASTE NUMBER U085

CONSENSUS REPORTS: NTP 7th Annual Report On Carcinogens. EPA Extremely Hazardous Substances List. EPA Genetic Toxicology Program. Community Right-To-Know List. Reported in EPA TSCA Inventory.

SAFETY PROFILE: Confirmed carcinogen with experimental tumorigenic data. Poison by ingestion, inhalation, skin contact, and intraperitoneal routes. Human mutation data reported. A severe skin and eye irritant. When heated to decomposition it emits acrid smoke and irritating fumes.

BGE000 CAS:92-52-4 HR: 3
BIPHENYL
mf: $C_{12}H_{10}$ mw: 154.22

PROP: Monoclinic, white scales, with a pleasant odor. Mp: 71°, bp: 255°, flash p: 235°F (CC), d: 0.991 @ 75°/4°, autoign temp: 1004°F, vap d: 5.31, lel: 0.6% @ 232°, uel: 5.8% @ 331°F.

SYNS: BIBENZENE ☐ 1,1'-BIPHENYL ☐ DIPHENYL (OSHA) ☐ LEMONENE ☐ PHENADOR-X ☐ PHENYLBENZENE ☐ PHPH ☐ XENENE

CONSENSUS REPORTS: EPA Genetic Toxicology Program. Reported in EPA TSCA Inventory. Community Right-To-Know List.

OSHA PEL: TWA 0.2 ppm
ACGIH TLV: TWA 0.2 ppm
DFG MAK: 0.2 ppm (1 mg/m³)

SAFETY PROFILE: Poison by intravenous route. Moderately toxic by ingestion. A powerful irritant by inhalation in humans. Human systemic effects by inhalation of very small amounts: flaccid paralysis, nausea or vomiting, and other unspecified gastrointestinal effects. Questionable carcinogen with experimental tumorigenic and neoplastigenic data. Mutation data reported. Combustible when exposed to heat or flame; can react with oxidizing materials. To fight fire, use CO_2, dry chemical, water spray, mist, fog. When heated to decomposition it emits acrid smoke and fumes.

BGJ250 CAS:90-43-7 HR: 3
2-BIPHENYLOL
mf: $C_{12}H_{10}O$ mw: 170.22

PROP: Needles from pet ether. Mp: 56°, bp: 275°.

SYNS: o-BIPHENYLOL ☐ (1,1'-BIPHENYL)-2-OL ☐ o-DIPHENYLOL ☐ DOWCIDE 1 ☐ DOWCIDE 1 ANTIMICROBIAL ☐ 2-HYDROXYBIFENYL (CZECH) ☐ o-HYDROXYBIPHENYL ☐ 2-HYDROXYBIPHENYL ☐ o-HYDROXYDIPHENYL ☐ 2-HYDROXYDIPHENYL ☐ KIWI LUSTR 277 ☐ NCI-C50351 ☐ OPP ☐ ORTHOHYDROXYDIPHENYL ☐ ORTHOPHENYLPHENOL ☐ ORTHOXENOL ☐ o-PHENYLPHENOL ☐ 2-PHENYLPHENOL ☐ PREVENTOL O EXTRA ☐ REMOL TRF ☐ TETROSIN OE ☐ TORSITE ☐ TUMESCAL OPE ☐ USAF EK-2219 ☐ o-XENOL

CONSENSUS REPORTS: IARC Cancer Review: Group 3 IMEMDT 7,56,87; Animal Inadequate Evidence IMEMDT 30,329,83; NTP Carcinogenesis Studies (dermal); No Evidence: mouse NTPTR* NTP-TR-301,86. Reported in EPA TSCA Inventory. On Community Right-To-Know List.

SAFETY PROFILE: A poison by intraperitoneal route. Moderately toxic by ingestion and possibly other routes. An experimental teratogen. Other experimental reproductive effects. Human mutation data reported. Se-

the lungs or glottis, and can produce respiratory paralysis. A corrosive irritant to eyes, skin, and mucous membranes. This material is so irritating that it provides its own warning of toxic concentration. Levels of 400–500 ppm are immediately dangerous to life. Its toxicity is comparable to that of hydrogen chloride. However, less than fatal concentration can be borne for fair periods of time with no apparent permanent damage. It is a common air contaminant.

A nonflammable gas. It reacts violently with acrolein, Al, $CsHC_2$, Cs_2O, chlorates, ClF_3, Cr, FeO, F_2, Mn, KHC_2, $KClO_4$, Rb_2C_2, Na, Na_2C_2, SnO, diamminolithiumacetylene carbide. Will react with water or steam to produce toxic and corrosive fumes. Incompatible with halogens or interhalogens, lithium nitrate, metal acetylides, metal oxides, metals, polymeric tubing, potassium chlorate, sodium hydride.

SOI000 CAS:2551-62-4 HR: 1
SULFUR HEXAFLUORIDE
DOT: UN 1080
mf: F_6S mw: 146.06

PROP: Colorless, odorless gas of high chemical stability and inertness. Nonflammable. White sublimable solid at low temps. Stable to H_2O and to glass. Mp: −51° (subl @ −64°), vap d: 6.602, d (liquid): 1.67 @ −100°. Very insol in H_2O; slightly sol in EtOH.

SYNS: HEXAFLUORURE de SOUFRE (FRENCH) ☐ SULFUR FLUORIDE

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: TWA 1000 ppm
ACGIH TLV: TWA 1000 ppm
DFG MAK: 1000 ppm (6000 mg/m³)
DOT CLASSIFICATION: 2.2; *Label:* Nonflammable Gas

SAFETY PROFILE: This material is chemically inert in the pure state and is considered to be physiologically inert as well. However, as it is ordinarily obtainable, it can contain variable quantities of the low-sulfur fluorides. Some of these are toxic, very reactive chemically, and corrosive in nature. These materials can hydrolyze on contact with water to yield hydrogen fluoride, which is highly toxic and very corrosive. In high concentrations and when pure it may act as a simple asphyxiant. Incompatible with disilane. Vigorous reaction with disilane. May explode. When heated to decomposition emits highly toxic fumes of F^- and SO_x.

SOI500 CAS:7664-93-9 HR: 3
SULFURIC ACID
DOT: UN 1830/UN 1832
mf: H_2O_4S mw: 98.08

PROP: Viscous, colorless oily liquid; odorless. Mp: 10.49°, d: 1.834, vap press: 1 mm @ 145.8°, bp: 290°, decomp @ 340°. Misc with water and alc (liberating great heat).

SYNS: ACIDE SULFURIQUE (FRENCH) ☐ ACIDO SOLFORICO (ITALIAN) ☐ BOV ☐ DIPPING ACID ☐ HYDROOT ☐ MATTING ACID (DOT) ☐ NORDHAUSEN ACID (DOT) ☐ OIL OF VITRIOL (DOT) ☐ SCHWEFEL SAEURELOESUNGEN (GERMAN) ☐ SPENT SULFURIC ACID (DOT) ☐ SULPHURIC ACID ☐ VITRIOL BROWN OIL ☐ VITRIOL, OIL OF (DOT) ☐ ZWAVELZUURO-PLOSSINGEN (DUTCH)

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: TWA 1 mg/m³
ACGIH TLV: TWA 1 mg/m³; STEL 3 ppm
DFG MAK: 1 mg/m³
NIOSH REL: (Sulfuric Acid) TWA 1 mg/m³
DOT CLASSIFICATION: 8; *Label:* Corrosive

SAFETY PROFILE: Human poison by unspecified route. Experimental poison by inhalation. Moderately toxic by ingestion. A severe eye irritant. Extremely irritating, corrosive, and toxic to tissue, resulting in rapid destruction of tissue, causing severe burns. If much of the skin is involved, exposure is accompanied by shock, collapse, and symptoms similar to those seen in severe burns. Repeated contact with dilute solutions can cause a dermatitis, and repeated or prolonged inhalation of a mist of sulfuric acid can cause inflammation of the upper respiratory tract, leading to chronic bronchitis. Sensitivity to sulfuric acid or its mists or vapors varies with individuals. Normally 0.125–0.50 ppm may be mildly annoying, 1.5–2.5 ppm can be definitely unpleasant, and 10–20 ppm is unbearable. Workers exposed to low concentrations of the vapor gradually lose their sensitivity to its irritating action. Inhalation of concentrated vapor or mists from hot acid or oleum can cause rapid loss of con-

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sciousness with serious damage to lung tissue. Severe exposure may cause a chemical pneumonitis; erosion of the teeth due to exposure to strong acid fumes has been recognized in industry. An experimental teratogen.

This is a very powerful acidic oxidizer that can ignite or explode on contact with many materials. When heated it emits highly toxic fumes; will react with water or steam to produce heat; can react with oxidizing or reducing materials. When heated to decomposition it emits toxic fumes of SO_x. See also SULFATES.

SOI520 CAS:8014-95-7 HR: 3
SULFURIC ACID, fuming
DOT: NA 1831
mf: $H_2O_7S_2$ mw: 178.14

PROP: Heavy, fuming, yellow liquid. H_2SO_4 + up to 80% SO_3. A solution of sulfuric anhydride (sulfur trioxide) in anhydrous sulfuric acid (NTIS** PB233-098).

SYNS: DISULPHURIC ACID ☐ DITHIONIC ACID ☐ FUMING SULFURIC ACID ☐ OLEUM ☐ PYROSULPHURIC ACID ☐ SULFURIC ACID, fuming > or =30% free sulfur trioxide (DOT) ☐ SULFURIC ACID, fuming <30% free sulfur trioxide (DOT) ☐ SULFURIC ACID MIXTURE with SULFUR TRIOXIDE

CONSENSUS REPORTS: IARC Cancer Review: Group 1 IMEMDT 54,41,92: Human Sufficient Evidence IMEMDT 54,41,92.

NIOSH REL: TWA 1 mg/m³
DOT CLASSIFICATION: 8; *Label:* Corrosive; DOT Class: 8; *Label:* Corrosive, Poison

SAFETY PROFILE: Confirmed human carcinogen. A poison. Moderately toxic by inhalation. A corrosive irritant to skin, eyes, and mucous membranes. A very dangerous fire hazard by chemical reaction with reducing agents and carbohydrates. A severe explosion hazard by chemical reaction with acetic acid, acetic anhydride, acetonitrile, acrolein, acrylic acid, acrylonitrile, allyl alcohol, allyl chloride, 2-amino ethanol, NH_4OH, aniline, cresol, n-butyraldehyde, cumene, dichloroethyl ether, diethylene glycol monomethyl ether, diisobutylene, epichlorohydrin, ethyl acetate, ethylene cyanohydrin, ethylene diamine, ethylene glycol, ethylene glycol monoethyl ether acetate, ethylene imine, glyoxal, HCl, HF, isoprene, isopropyl alcohol, mesityl oxide, methyl ethyl ketone, HNO_3, 2-nitropropane, β-propiolacetone, propylene oxide, pyridine, NaOH, styrene monomer, vinylidene chloride, sulfolane, vinyl acetate. Will react with water or steam to produce heat and toxic and corrosive fumes. Can react vigorously with reducing materials. When heated to decomposition it emits highly toxic fumes of SO_x. See also SULFUROUS ACID.

SOI530 CAS:7664-93-9 HR: 3
SULFURIC ACID (mist)
mf: H_2O_4S mw: 98.08

PROP: The airborne form of sulfuric acid is an aerosol of droplets of varying diameter of aq sulfuric acid solution.

CONSENSUS REPORTS: EPA Extremely Hazardous Substances List. Reported in EPA TSCA Inventory.

ACGIH TLV: TWA 1 mg/m³
NIOSH REL: TWA 1 mg/m³

SAFETY PROFILE: Poison by inhalation. Human systemic effects by inhalation: mouth effects. When heated to decomposition it emits toxic fumes of SO_x. See also SULFURIC ACID.

SON510 CAS:10025-67-9 HR: 3
SULFUR MONOCHLORIDE
mf: Cl_2S_2 mw: 135.02

PROP: Amber to yellowish-red, oily, fuming liquid; penetrating odor. Hydrolyzes to HCl + SO_2 + H_2S. Mp: −77°, bp: 138.0°, flash p: 245°F (CC), d: 1.6885 @ 15.5°/15.5°, autoign temp: 453°F, vap press: 10 mm @ 27.5°, vap d: 4.66. Decomp in water. Sol in CS_2 and org solvs.

SYNS: CHLORIDE of SULFUR (DOT) ☐ DISULFUR DICHLORIDE ☐ SIARKI CHLOREK (POLISH) ☐ SULFUR CHLORIDE ☐ SULFUR CHLORIDE (DI) (DOT) ☐ SULFUR SUBCHLORIDE ☐ THIOSULFUROUS DICHLORIDE

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: CL 1 ppm
ACGIH TLV: CL 1 ppm
DFG MAK: 1 ppm (6 mg/m³)
NIOSH REL: (Sulfur Monochloride) CL 1 ppm

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CONSENSUS REPORTS: Reported in EPA TSCA Inventory, EPA Genetic Toxicology Program.

SAFETY PROFILE: A human poison by an unspecified route. Poison by ingestion and intravenous routes. Moderately toxic by intraperitoneal route. Human systemic effects by ingestion: hallucinations and distorted perceptions, sleepiness, constipation, cyanosis, respiratory stimulation, kidney damage, methemoglobinemia-carboxyhemoglobinemia, and decreased body temperature. Mutation data reported. When heated to decomposition it emits toxic fumes of NO_x. Combustible when exposed to heat or flame. See also ANILINE.

AAT250 CAS:64-19-7 HR: 3
ACETIC ACID
DOT: UN 2789/UN 2790
mf: $C_2H_4O_2$ mw: 60.06

PROP: Clear, colorless liquid; pungent odor. Mp: 16.7°, bp: 118.1°, flash p: 109°F (CC), lel: 5.4%, uel: 16.0% @ 212°F, d: 1.049 @ 20°/4°, autoign temp: 869°F, vap press: 11.4 mm @ 20°, vap d: 2.07. Misc in water, alc, and eth.

SYNS: ACETIC ACID (aqueous solution) (DOT) ☐ ACETIC ACID, glacial or acetic acid solution, >80% acid, by weight (UN 2790) (DOT) ☐ ACETIC ACID, GLACIAL ☐ ACETIC ACID solution, >10% but not >80% acid, by weight (UN 2790) (DOT) ☐ ACIDE ACETIQUE (FRENCH) ☐ ACIDO ACETICO (ITALIAN) ☐ AZIJNZUUR (DUTCH) ☐ ESSIGSAEURE (GERMAN) ☐ ETHANOIC ACID ☐ ETHYLIC ACID ☐ FEMA No. 2006 ☐ GLACIAL ACETIC ACID ☐ METHANECARBOXYLIC ACID ☐ OCTOWY KWAS (POLISH) ☐ VINEGAR ACID

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: TWA 10 ppm
ACGIH TLV: TWA 10 ppm; STEL 15 ppm
DFG MAK: 10 ppm (25 mg/m³)
DOT CLASSIFICATION: 8; *Label*: Corrosive

SAFETY PROFILE: A human poison by an unspecified route. Moderately toxic by various routes. A severe eye and skin irritant. Can cause burns, lachrymation, and conjunctivitis. Human systemic effects by ingestion: changes in the esophagus, ulceration of or bleeding from the small and large intestines. Human systemic irritant effects and mucous membrane irritant. Experimental reproductive effects. Mutation data reported. A flammable liquid. A fire and explosion hazard when exposed to heat or flame; can react vigorously with oxidizing materials. To fight fire, use CO_2, dry chemical, alcohol foam, foam and mist. When heated to decomposition it emits irritating fumes.

AAU000 CAS:150-84-5 HR: 1
ACETIC ACID, CITRONELLYL ESTER
mf: $C_{12}H_{22}O_2$ mw: 198.34

PROP: Found in oils of Citronella Ceylon, geranium, and about 20 other oils (FCTXAV 11,1011,73). Colorless liquid; fruity odor. D: 0.883–0.893, refr index: 1.440–1.450, flash p: 212°F. Sol in alc and fixed oils; insol in glycerin, propylene glycol, and water @ 229°.

SYNS: ACETIC ACID-3,7-DIMETHYL-6-OCTEN-1-YL ESTER ☐ CITRONELLYL ACETATE (FCC) ☐ 2,6-DIMETHYL 2-OCTEN-8-OL ACETATE ☐ 3,7-DIMETHYL-6 OCTEN-1 YL ACETATE ☐ FEMA No. 2311

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

SAFETY PROFILE: Mildly toxic by ingestion. A human skin irritant. See also ESTERS. Combustible liquid. When heated to decomposition it emits acrid smoke and irritating fumes.

AAU250 CAS:18461-55-7 HR: 3
ACETIC ACID-4,6-DINITRO-o-CRESYL ESTER
mf: $C_9H_8N_2O_6$ mw: 240.19

SYNS: 4,6-DINITRO-o-KRESYLESTER KYSELINY OCTOVE (CZECH) ☐ DNOK-ACETAT (CZECH)

NIOSH REL: (Dinitro ortho-Cresyl) TWA 0.2 mg/m³

SAFETY PROFILE: Poison by ingestion and intraperitoneal routes. A skin and severe eye irritant. When heated to decomposition it emits toxic fumes of NO_x.

AAW000 CAS:56856-83-6 HR: 3
ACETIC ACID METHYLNITROSAMINOMETHYL ESTER
mf: $C_4H_8N_2O_3$ mw: 132.14

SYNS: α-ACETOXY DIMETHYLNITROSAMINE ☐ ACETOXYMETHYL-METHYL-NITROSAMIN (GERMAN) ☐

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alkaloid nicotine, tars, phenols, carbon monoxide, cyanides, nitrates, nitrites, carcinogenic, co-carcinogenic and perhaps 100 other chemicals, alpha-emitters, etc. An experimental teratogen. A nicotine-containing dried leaf of the tobacco plant. Habitual inhalation of tobacco smoke is considered a leading cause of lung cancer and circulatory problems, cardiac problems, etc. Combustible when exposed to heat or flame. See also other tobacco entries, SMOKELESS TOBACCO, and NICOTINE.

TGI100 **HR: 3**
TOBACCO PLANT

PROP: Large annual or perennial shrubs with leaves that are often broad, hairy, and sticky. The trumpet-shaped flowers are white, yellow, green-yellow, or red. The seed capsule holds many small seeds. *N. tabacum* is the principal commercial tobacco in the western countries. *N. rustica*, native to South America, is found sporadically across the United States and is the most widely cultivated tobacco in the Orient. *N. longiflora* is commonly cultivated as a garden ornamental. *N. attenuata* grows in the region bounded by Idaho, Baja California, and Texas. *N. glauca* is native to South America and now grows in the southwestern United States, Hawaii, Mexico, and the West Indies.

SYNS: NICOTIANA ATTENUATA □ NICOTIANA GLAUCA □ NICOTIANA LONGIFLORA □ NICOTIANA RUSTICA □ NICOTIANA TABACUM □ PAKA (HAWAII) □ TABAC (FRENCH) □ TABACO (SPANISH)

SAFETY PROFILE: Confirmed human carcinogen by several routes. The whole plant contains poisonous nicotine and other chemically related alkaloids. The primary alkaloid in *N. tabacum* is nicotine. The primary alkaloid in *N. glauca* is anabasine. Ingestion of any part of the plant can cause salivation, nausea, vomiting, distorted perceptions, convulsions, vasomotor collapse, and respiratory failure. Most serious poisonings result from ingestion of the leaves in salad, use of infusions as enemas, or skin absorption of alkaloids during commercial harvesting. See also SMOKELESS TOBACCO, NICOTINE, and other tobacco entries.

TGJ750 **CAS:119-93-7** **HR: 3**
o-TOLIDINE
mf: $C_{14}H_{16}N_2$ mw: 212.32

PROP: White to reddish crystals or leaflets. Mp: 129–131°. Very slty sol in water; sol in alc, ether, acetic acid.

SYNS: BIANISIDINE □ 4,4'-BI-o-TOLUIDINE □ C.I. 37230 □ C.I. AZOIC DIAZO COMPONENT 113 □ (4,4'-DIAMINE)-3,3'-DIMETHYL(1,1'-BIPHENYL) □ 4,4'-DIAMINO-3,3'-DIMETHYLBIPHENYL □ 4,4'-DIAMINO-3,3'-DIMETHYLDIPHENYL □ DIAMINODITOLYL □ 3,3'-DIMETHYLBENZIDIN □ 3,3'-DIMETHYLBENZIDINE □ 3,3'-DIMETHYL-4,4'-BIPHENYLDIAMINE □ 3,3'-DIMETHYLBIPHENYL-4,4'-DIAMINE □ 3,3'-DIMETHYL-(1,1'-BIPHENYL)-4,4'-DIAMINE □ 3,3'-DIMETHYL-4,4'-DIPHENYLDIAMINE □ 3,3'-DIMETHYLDIPHENYL-4,4'-DIAMINE □ 4,4'-DI-o-TOLUIDINE □ FAST DARK BLUE BASE R □ RCRA WASTE NUMBER U095 □ o-TOLIDIN □ 3-TOLIDIN (GERMAN) □ 3-TOLIDINA (ITALIAN) □ TOLIDINE □ 3,3'-TOLIDINE □ 3-TOLIDINE □ 3,3'-TOLIDINE

CONSENSUS REPORTS: NTP 7th Annual Report On Carcinogens. IARC Cancer Review: Group 2B IMEMDT 7,56,87; Animal Limited Evidence IMEMDT 1,87,72. EPA Genetic Toxicology Program. Community Right-To-Know List. Reported in EPA TSCA Inventory.

ACGIH TLV: Suspected Human Carcinogen
DFG MAK: Animal Carcinogen. Suspected Human Carcinogen
NIOSH REL: (o-Toluidine) CL 0.02 mg/m³/60M; avoid skin contact

SAFETY PROFILE: Confirmed carcinogen with experimental carcinogenic and tumorigenic data. Poison by intraperitoneal route. Moderately toxic by ingestion. Human mutation data reported. When heated to decomposition it emits toxic fumes of NO_x.

TGK750 **CAS:108-88-3** **HR: 3**
TOLUENE
DOT: UN 1294
mf: C_7H_8 mw: 92.15

PROP: Colorless liquid; benzol-like odor. Mp: −95 to −94.5°, fp: −95°, bp: 110.4°, flash p: 40°F (CC), LLC: 75–80, lel: 1.27%, uel: 7%, d: 0.866 @ 20°/4°, autoign temp: 996°F, vap press: 36.7 mm @ 30°, vap d: 3.14. Insol in water; sol in acetone; misc in abs alc, ether, chloroform.

SYNS: ANTISAL 1a □ BENZENE, METHYL- □ METHA-

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CIDE □ METHANE, PHENYL- □ METHYLBENZENE □ METHYLBENZOL □ NCI-C07272 □ PHENYLMETHANE □ RCRA WASTE NUMBER U220 □ TOLUEEN (DUTCH) □ TOLUEN (CZECH) □ TOLUOL (DOT) □ TOLUOLO (ITALIAN) □ TOLU-SOL

CONSENSUS REPORTS: Community Right-To-Know List. Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

OSHA PEL: TWA 100 ppm; STEL 150 ppm
ACGIH TLV: TWA 50 ppm (skin); BEI: 1 mg (toluene)/L in venous blood at end of shift; 20 ppm toluene in end-exhaled air during shift
DFG MAK: 50 ppm (190 mg/m³); BAT: 340 µg/dL in blood at end of shift.
NIOSH REL: (Toluene) TWA 100 ppm; CL 200 ppm/10M
DOT CLASSIFICATION: 3; *Label:* Flammable Liquid

SAFETY PROFILE: Poison by intraperitoneal route. Moderately toxic by intravenous and subcutaneous routes. Mildly toxic by inhalation. An experimental teratogen. Human systemic effects by inhalation: CNS recording changes, hallucinations or distorted perceptions, motor activity changes, antipsychotic, psychophysiological test changes, and bone marrow changes. Experimental reproductive effects. Mutation data reported. A human eye irritant. An experimental skin and severe eye irritant.

Toluene is derived from coal tar, and commercial grades usually contain small amounts of benzene as an impurity. Inhalation of 200 ppm of toluene for 8 hours may cause impairment of coordination and reaction time; with higher concentrations (up to 800 ppm) these effects are increased and are observed in a shorter time. In the few cases of acute toluene poisoning reported, the effect has been that of a narcotic, the workman passing through a stage of intoxication into one of coma. Recovery following removal from exposure has been the rule. An occasional report of chronic poisoning describes an anemia and leukopenia, with biopsy showing a bone marrow hypoplasia. These effects, however, are less common in people working with toluene, and they are not as severe. At 200–500 ppm, headache, nausea, eye irritation, loss of appetite, a bad taste, lassitude, impairment of coordination and reaction time are reported, but are not usually accompanied by any laboratory or physical findings of significance. With higher concentrations, the above complaints are increased and in addition, anemia, leukopenia, and enlarged liver may be found in rare cases. A common air contaminant, emitted from modern building materials (CENEAR 69,22,91). Used in production of drugs of abuse.

Flammable liquid. A very dangerous fire hazard when exposed to heat, flame, or oxidizers. Explosive in the form of vapor when exposed to heat or flame. Explosive reaction with 1,3-dichloro-5,5-dimethyl-2,4-imidazolididione, dinitrogen tetraoxide, concentrated nitric acid, H_2SO_4 + HNO_3, N_2O_4, $AgClO_3$, BrF_3, UF_6, sulfur dichloride. Forms an explosive mixture with tetranitromethane. Can react vigorously with oxidizing materials. To fight fire, use foam, CO_2, dry chemical. When heated to decomposition it emits acrid smoke and irritating fumes.

TGL500 CAS:25376-45-8 HR: 3
TOLUENEDIAMINE
mf: $C_7H_{10}N_2$ mw: 122.19

SYNS: BENZENEDIAMINE, α-METHYL- □ DIAMINOTOLUENE □ METHYLPHENYLENEDIAMINE □ RCRA WASTE NUMBER U221

CONSENSUS REPORTS: Community Right-To-Know List. Reported in EPA TSCA Inventory.

SAFETY PROFILE: A poison by ingestion, intraperitoneal, and intravenous routes. When heated to decomposition it emits toxic fumes of NO_x. See also other toluene diamine entries and AROMATIC AMINES.

TGL750 CAS:95-80-7 HR: 3
TOLUENE-2,4-DIAMINE
DOT: UN 1709
mf: $C_7H_{10}N_2$ mw: 122.19

PROP: Needles from water or prisms from alc. Mp: 99°, bp: 292°, bp: 148–150° @ 8 mm, vap press: 1 mm @ 106.5°.

SYNS: 3-AMINO-p-TOLUIDINE □ 5-AMINO-o-TOLUIDINE □ AZOGEN DEVELOPER H □ BENZOFUR MT □ C.I. 76035 □ C.I. OXIDATION BASE □ C.I. OXIDATION BASE 20 □ C.I. OXIDATION BASE 35 □ C.I. OXIDATION BASE 200 □ DEVELOPER 14 □ DEVELOPER B □ DEVELOPER DB □ DEVELOPER DBJ □ DEVELOPER H □ DEVELOPER MC □ DEVELOPER MT □ DEVELOPER

SYNS: XENON (UN 0236) (DOT) □ XENON, refrigerated liquid (cryogenic liquids) (UN 2591) (DOT)

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 2.2; *Label:* Nonflammable Gas

SAFETY PROFILE: An inert gas that acts as a simple asphyxiant. For a discussion of toxicity effects, see ARGON. A common air contaminant.

XGS000 CAS:1330-20-7 HR: 3
XYLENE
DOT: UN 1307
mf: C_8H_{10} mw: 106.18

PROP: A clear liquid. Bp: 138.5°, flash p: 100°F (TOC), d: 0.864 @ 20°/4°, vap press: 6.72 mm @ 21°. Composition: as nonaromatics 0.07%, toluene 14%, ethyl benzene 19.27%, p-xylene 7.84%, m-xylene 65.01%, o-xylene 7.63%, C9 and aromatics 0.04% (TXAPA9 33,543,75).

SYNS: DIMETHYLBENZENE □ KSYLEN (POLISH) □ METHYL TOLUENE □ NCI-C55232 □ RCRA WASTE NUMBER U239 □ VIOLET 3 □ XILOLI (ITALIAN) □ XYLENEN (DUTCH) □ XYLOL (DOT) □ XYLOLE (GERMAN)

CONSENSUS REPORTS: Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program. Community Right-To-Know List.

OSHA PEL: TWA 100 ppm; STEL 150 ppm
ACGIH TLV: TWA 100 ppm; STEL 150 ppm; BEI: 1.5 g (methyl hippuric acids)/g creatinine in urine at end of shift
DFG MAK: (all isomers) 100 ppm (440 mg/m³); BAT: 150 µg/dL in blood at end of shift
NIOSH REL: (Xylene) TWA 100 ppm: CL 200 ppm/10M
DOT CLASSIFICATION: 3; *Label:* Flammable Liquid

SAFETY PROFILE: Moderately toxic by intraperitoneal and subcutaneous routes. Mildly toxic by ingestion and inhalation. An experimental teratogen. Human systemic effects by inhalation: olfactory changes, conjunctiva irritation, and pulmonary changes. Experimental reproductive effects. Mutation data reported. A human eye irritant. An experimental skin and severe eye irritant. Some temporary corneal effects are noted, as well as some conjunctival irritation by instillation (adding drops to the eyes one drop at a time). Irritation can start @ 200 ppm. A very dangerous fire hazard when exposed to heat or flame; can react with oxidizing materials. To fight fire, use foam, CO_2, dry chemical. When heated to decomposition it emits acrid smoke and irritating fumes. See also other xylene entries.

XHA000 CAS:108-38-3 HR: 3
m-XYLENE
mf: C_8H_{10} mw: 106.18

PROP: Colorless, mobile liquid. Mp: −47.9°, bp: 139°, lel: 1.1%, uel: 7.0%, flash p: 77°F, d: 0.864 @ 20°/4°, vap press: 10 mm @ 28.3°, vap d: 3.66, autoign temp: 986°F. Insol in water; misc with alc, ether, and some organic solvents.

SYNS: m-DIMETHYLBENZENE □ 1,3-DIMETHYLBENZENE □ 1,3-XYLENE □ m-XYLOL (DOT)

CONSENSUS REPORTS: Community Right-To-Know List. Reported in EPA TSCA Inventory.

OSHA PEL: TWA 100 ppm; STEL 150 ppm
ACGIH TLV: TWA 100 ppm; STEL 150 ppm; BEI: methyl hippuric acids in urine at end of shift 1.5 g/g creatinine
NIOSH REL: (Xylene) TWA 100 ppm; CL 200 ppm/10M
DOT CLASSIFICATION: 3; *Label:* Flammable Liquid

SAFETY PROFILE: Moderately toxic by intraperitoneal route. Mildly toxic by ingestion, skin contact, and inhalation. An experimental teratogen. Human systemic effects by inhalation: motor activity changes, ataxia, and irritability. Experimental reproductive effects. A severe skin irritant. A common air contaminant. A very dangerous fire hazard when exposed to heat or flame; can react with oxidizing materials. Explosive in the form of vapor when exposed to heat or flame. To fight fire, use foam, CO_2, dry chemical. Emitted from modern building materials (CENEAR 69,22.91). When heated to decomposition it emits acrid smoke and irritating fumes. See also other xylene entries.

HHS000 CAS:74-90-8 HR: 3
HYDROCYANIC ACID
DOT: NA 1051/UN 1613/UN 1614
mf: CHN mw: 27.03

PROP: Very volatile liquid or colorless gas smelling of bitter almonds. Mp: −13°, bp: 25.7°, lel: 5.6%, uel: 40%, flash p: 0°F (CC), d: 0.715 @ 0°, autoign temp: 1000°F, vap press: 400 mm @ 9.8°, vap d: 0.932. Misc in water, alc, and ether.

SYNS. ACIDE CYANHYDRIQUE (FRENCH) ☐ ACIDO CIANIDRICO (ITALIAN) ☐ AERO liquid HCN ☐ BLAUSAEURE (GERMAN) ☐ BLAUWZUUR (DUTCH) ☐ CARBON HYDRIDE NITRIDE (CHN) ☐ CYAANWATERSTOF (DUTCH) ☐ CYANWASSERSTOFF (GERMAN) ☐ CYCLON ☐ CYCLONE B ☐ CYJANOWODOR (POLISH) ☐ EVERCYN ☐ FORMIC ANAMMONIDE ☐ FORMONITRILE ☐ HYDROCYANIC ACID, aqueous solutions <5% HCN (NA 1613) (DOT) ☐ HYDROCYANIC ACID, aqueous solutions not >20% hydrocyanic acid (UN 1613) (DOT) ☐ HYDROCYANIC ACID (PRUSSIC), unstabilized (DOT) ☐ HYDROGEN CYANIDE ☐ HYDROGEN CYANIDE (ACGIH,OSHA) ☐ HYDROGEN CYANIDE, anhydrous, stabilized (UN 1051) (DOT) ☐ HYDROGEN CYANIDE, anhydrous, stabilized, absorbed in a porous inert material (UN 1614) (DOT) ☐ PRUSSIC ACID ☐ PRUSSIC ACID, UNSTABILIZED ☐ RCRA WASTE NUMBER P063 ☐ ZACLONDISCOIDS

CONSENSUS REPORTS: EPA Extremely Hazardous Substances List. Community Right-To-Know List. Reported in EPA TSCA Inventory.

OSHA PEL: STEL 4.7 ppm (skin)
ACGIH TLV: CL 4.7 ppm (skin)
DFG MAK: 10 ppm (11 mg/m³)
NIOSH REL: (Cyanide) CL 5 mg(CN)/m³/10M
DOT CLASSIFICATION: 6.1; *Label:* Poison (NA 1613, UN 1613, UN 1614); DOT Class: Forbidden (unstabilized); DOT Class: 6.1; *Label:* Poison, Flammable Liquid (UN 1051)

SAFETY PROFILE: A deadly human and experimental poison by all routes. Hydrocyanic acid and the cyanides are true protoplasmic poisons, combining in the tissues with the enzymes associated with cellular oxidation. They thereby render the oxygen unavailable to the tissues and cause death through asphyxia. The suspension of tissue oxidation lasts only while the cyanide is present; upon its removal, normal function is restored, provided death has not already occurred.

Very dangerous fire hazard when exposed to heat, flame, or oxidizers. Can polymerize explosively at 50–60°C or in the presence of traces of alkali. Severe explosion hazard when exposed to heat or flame or by chemical reaction with oxidizers. The anhydrous liquid is stabilized at or below room temperature by the addition of acid. The gas forms explosive mixtures with air. Reacts violently with acetaldehyde. To fight fire, use CO_2, non-alkaline dry chemical, foam. When heated to decomposition or in reaction with water, steam, acid, or acid fumes, it produces highly toxic fumes of CN^-. An insecticide. See also CYANIDE.

HHS600 CAS:16872-11-0 HR: 2
HYDROFLUOBORIC ACID
DOT: UN 1775
mf: $BF_4 \cdot H$ mw: 87.82

SYNS: BORATE(1-), TETRAFLUORO-, HYDROGEN ☐ BOROFLUORIC ACID ☐ FLUOBORIC ACID ☐ FLUOBORIC ACID (DOT) ☐ HYDROGEN TETRAFLUOROBORATE ☐ TETRAFLUOROBORIC ACID

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: TWA 2.5 mg(F)/m³
NIOSH REL: (Fluorides, inorganic) TWA 2.5 mg(F)/m³
DOT CLASSIFICATION: 8; *Label:* Corrosive

SAFETY PROFILE: A severe corrosive. A severe skin and eye irritant. When heated to decomposition it emits toxic vapors of boron and F^-.

HHU500 CAS:7664-39-3 HR: 3
HYDROFLUORIC ACID
DOT: UN 1052/UN 1790
mf: FH mw: 20.01

PROP: Clear, colorless, nonflammable, fuming, corrosive liquid or gas. One of the most acidic substances known, but aq solns are only weakly acid. Dissolves silica to give H_2SiF_6. Mp: −83.1°, bp: 19.54°, d: 0.901 g/L (gas), 0.699 @ 22° (liquid), vap press: 400 mm @ 2.5°. Very sol in H_2O, EtOH; slty sol in Et_2O.

SYNS: ACIDE FLUORHYDRIQUE (FRENCH) ☐ ACIDO FLUORIDRICO (ITALIAN) ☐ FLUOROWODOR (POLISH) ☐ FLUORWASSERSTOFF (GERMAN) ☐ FLUORWATERSTOF (DUTCH) ☐ HYDROFLUORIC ACID, solution, >60% strength (UN 1790) (DOT) ☐ HYDRO-

FLUORIC ACID, solution, not >60% strength (UN 1790) (DOT) □ HYDROFLUORIDE □ HYDROGEN FLUORIDE, anhydrous (UN 1052) (DOT) □ RCRA WASTE NUMBER U134 □ RUBIGINE

CONSENSUS REPORTS: EPA Extremely Hazardous Substances List. Community Right-To-Know List. EPA Genetic Toxicology Program. Reported in EPA TSCA Inventory.

OSHA PEL: TWA 3 ppm; STEL 6 ppm (F)
ACGIH TLV: CL 3 ppm (F)
DFG MAK: 3 ppm (2 mg/m³); BAT 7.0 mg/g creatinine in urine at end of shift
NIOSH REL: (HF) TWA 2.5 mg(F)/m³; CL 5.0 mg(F)/m³/15M
DOT CLASSIFICATION: 8; *Label:* Corrosive, Poison

SAFETY PROFILE: A human poison by inhalation. A poison experimentally by inhalation, subcutaneous, and intraperitoneal routes. A corrosive irritant to skin, eyes (@ 0.05 mg/L), and mucous membranes. Experimental teratogenic effects. Experimental reproductive effects. Mutation data reported. Inhalation of the vapor may cause ulcers of the upper respiratory tract. Concentrations of 50–250 ppm are dangerous, even for brief exposures. Hydrofluoric acid produces severe skin burns that are slow in healing. The subcutaneous tissues may be affected, becoming blanched and bloodless. Gangrene of the affected areas may follow. It can react violently with many substances. Reacts with water or steam to produce toxic and corrosive fumes. When heated to decomposition it emits highly corrosive fumes of F^-. See also FLUORIDES.

HHV000 HR: 3
HYDROFLUORIC ACID mixed with SULFURIC ACID
DOT: UN 1786

SYNS: HYDROFLUORIC and SULFURIC ACIDS, MIXTURE (DOT) □ SULFURIC AND HYDROFLUORIC ACIDS, MIXTURE (DOT)

DOT CLASSIFICATION: 8; *Label:* Corrosive, Poison

SAFETY PROFILE: Poison by ingestion, inhalation, and skin contact. A corrosive irritant to the eyes, skin and mucous membranes. When heated to decomposition it emits very toxic fumes of HF and SO_x. See also HYDROFLUORIC ACID and SULFURIC ACID.

HHW500 CAS:1333-74-0 HR: 3
HYDROGEN
DOT: UN 1049/UN 1966
mf: H_2 mw: 2.02

PROP: Stable, colorless, odorless, tasteless gas. Forms compounds with almost every other element. Mp: −259.18°, bp: −252.8°, lel: 4.1%, uel: 74.2%, d: 0.0899 g/L, autoign temp: 752°F, vap d: 0.069. Very low solubility in most liquids.

SYNS: HYDROGEN (DOT) □ HYDROGEN, compressed (DOT) □ HYDROGEN, refrigerated liquid (DOT)

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 2.1; *Label:* Flammable Gas

SAFETY PROFILE: Practically no toxicity except that it may asphyxiate. Highly dangerous fire and severe explosion hazard when exposed to heat, flame, or oxidizers. Flammable or explosive when mixed with air, O_2, chlorine. To fight fire, stop flow of gas. It can react violently with many substances.

HHW800 CAS:61788-32-7 HR: 3
HYDROGENATED TERPHENYLS

PROP: Complex mixtures of o-, m-, and p-terphenyls in various stages of hydrogenation. Five such stages exist for each of the three above isomers.

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: TWA 0.5 ppm
ACGIH TLV: TWA 0.5 ppm
NIOSH REL: (Hydrogenated Terphenyls) TWA 0.5 ppm

SAFETY PROFILE: Contact with hot coolant can cause severe damage to lungs, skin, and eyes from burns. May cause chronic damage to liver, kidney, and blood-forming organs; metabolic disorders. Inhalation has caused bronchopneumonia. When heated to decomposition they emit acrid smoke and fumes.

HHX000 CAS:7647-01-0 HR: 3
HYDROGEN CHLORIDE
mf: ClH mw: 36.46

PROP: Colorless, corrosive, nonflammable

PLH500 CAS:17029-22-0 HR: 3
POTASSIUM HEXAFLUOROARSENATE
mf: AsF_6K mw: 228.02

PROP: Thick, colorless plates.

SYNS: HEXAFLURATE ☐ NOPALMATE

CONSENSUS REPORTS: Arsenic and its compounds are on the Community Right-To-Know List. Reported in EPA TSCA Inventory.

OSHA PEL: TWA 2.5 mg(F)/m³; Cancer Hazard
NIOSH REL: CL 2 µg/m³/15M

SAFETY PROFILE: Confirmed human carcinogen. Poison by intravenous route. Moderately toxic by ingestion. When heated to decomposition it emits very toxic fumes of K_2O, F^-, and As. See also FLUORIDES and ARSENIC COMPOUNDS.

PLH750 CAS:16871-90-2 HR: 3
POTASSIUM HEXAFLUOROSILICATE
DOT: UN 2655
mf: $F_6Si•2K$ mw: 220.29

PROP: White, fine powder or colorless, cubic crystals. Moisture-sensitive. D: 2.27, mp: decomp. Sltly sol in cold water; practically insol in alc.

SYNS: POTASSIUM FLUOSILICATE ☐ POTASSIUM SILICOFLUORIDE (DOT)

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: TWA 2.5 mg(F)/m³
NIOSH REL: TWA (Inorganic Fluorides) 2.5 mg(F)/m³
DOT CLASSIFICATION: 6.1; *Label:* KEEP AWAY FROM FOOD

SAFETY PROFILE: A poison by ingestion and subcutaneous routes. Ingestion can cause vomiting and diarrhea. A strong irritant. Incompatible with hydrofluoric acid. When heated to decomposition it emits toxic fumes of SiF_4, K_2SiF_6, and KF.

PLI000 CAS:16919-27-0 HR: 3
POTASSIUM HEXAFLUOROTITANATE
mf: $F_6Ti•2K$ mw: 240.10

PROP: White solid.

SYNS: FLUOTITANATE de POTASSIUM (FRENCH) ☐ TITANIUM POTASSIUM FLUORIDE

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: TWA 2.5 mg(F)/m³
NIOSH REL: TWA 2.5 mg(F)/m³

SAFETY PROFILE: Poison by subcutaneous route. When heated to decomposition it emits toxic fumes of K_2O and F^-. See also FLUORIDES.

PLJ250 CAS:7693-26-7 HR: 3
POTASSIUM HYDRIDE
mf: HK mw: 40.11

PROP: White needles. Moisture-sensitive white crystals. Mp: decomp, d: 1.43–1.47.

SAFETY PROFILE: Dangerous fire hazard by chemical reaction. Ignites spontaneously in air. Moderate explosion hazard when exposed to heat or by chemical reaction. Will react with water, steam, or acids to produce H_2 which then ignites. Can react vigorously with oxidizing materials. To fight fire, use CO_2, dry chemical. Potentially explosive reactions with o-2,4-dinitrophenylhydroxylamine, fluoroalkenes. Ignites on contact with air, oxygen + moisture, fluorine. Incompatible with Cl_2, acetic acid, acrolein, acrylonitrile. (CaC + Cl_2), ClO_2, (H_2O_2 + Cl_2), ($CHFl_3$ + CH_3OH), 1,2-dichloroethylene, maleic anhydride, (n-methyl-n-nitrosourea + CH_2Cl_2), nitroethane, NCl_3, nitromethane, nitroparaffins, o-nitrophenol, nitropropane, n-nitrosomethylurea, (nitrosomethylurea + CH_2Cl_2), H_2O, trichloroethylene, tetrahydrofuran, tetrachlorethane. When heated to decomposition it emits highly toxic fumes of K_2O. See also POTASSIUM and HYDRIDES.

PLJ500 CAS:1310-58-3 HR: 3
POTASSIUM HYDROXIDE
DOT: UN 1813/UN 1814
mf: HKO mw: 56.11

PROP: White or colorless, orthorhombic, deliquescent pieces, lumps, or sticks having crystalline fracture. Mp: 406°, bp: 1324°, d: 2.044. Very sol in water, alc; sol in EtOH; insol in Et_2O.

SYNS: CAUSTIC POTASH ☐ CAUSTIC POTASH, dry, solid, flake, bead, or granular (DOT) ☐ CAUSTIC POTASH, liquid or solution (DOT) ☐ HYDROXYDE de POTASSIUM (FRENCH) ☐ KALIUMHYDROXID (GERMAN) ☐ KALIUMHYDROXYDE (DUTCH) ☐ LYE ☐ POTASSA

□ POTASSE CAUSTIQUE (FRENCH) □ POTASSIO (IDROSSIDO di) (ITALIAN) □ POTASSIUM HYDRATE (DOT) □ POTASSIUM HYDROXIDE, dry, solid, flake, bead, or granular (DOT) □ POTASSIUM HYDROXIDE, liquid or solution (DOT) □ POTASSIUM (HYDROXYDE de) (FRENCH)

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

OSHA PEL: CL 2 mg/m³
ACGIH TLV: CL 2 mg/m³
DOT CLASSIFICATION: 8; *Label:* Corrosive

SAFETY PROFILE: Poison by ingestion. An eye irritant and severe human skin irritant. Very corrosive to the eyes, skin, and mucous membranes. Mutation data reported. Ingestion may cause violent pain in throat and epigastrium, hematemesis, collapse. Stricture of esophagus may result if substance is not immediately fatal. Above 84° it reacts with reducing sugars to form poisonous carbon monoxide gas. Violent, exothermic reaction with water. Potentially explosive reaction with bromoform + crown ethers, chlorine dioxide, nitrobenzene, nitromethane, nitrogen trichloride, peroxidized tetrahydrofuran, 2,4,6-trinitrotoluene. Reaction with ammonium hexachloroplatinate(2) + heat forms a heat-sensitive explosive product. Violent reaction or ignition under the appropriate conditions with acids, alcohols, p-bis(1,3-dibromoethyl)benzene, cyclopentadiene, germanium, hyponitrous acid, maleic anhydride, nitroalkanes, 2-nitrophenol, potassium peroxodisulfate, sugars, 2,2,3,3-tetrafluoropropanol, thorium dicarbide. When heated to decomposition it emits toxic fumes of K_2O. See also SODIUM HYDROXIDE.

PLK000 CAS:7778-66-7 HR: 3
POTASSIUM HYPOCHLORITE
mf: ClHO·K mw: 91.56

SYNS: HYPOCHLOROUS ACID, POTASSIUM SALT □ POTASSIUM CHLORIDE OXIDE

CONSENSUS REPORTS: IARC Cancer Review: Group 3 IMEMDT 52,159,91; Animal Inadequate Evidence IMEMDT 52,159,91; Human No Available Data IMEMDT 52,159, 91. Reported in EPA TSCA Inventory.

SAFETY PROFILE: A poison by all routes. Powerful irritant and corrosive to skin, eyes, and mucous membranes. When heated to decomposition it emits toxic fumes of K_2O and Cl^-. See also HYPOCHLORITES.

PLK250 CAS:7758-05-6 HR: 3
POTASSIUM IODATE
mf: $IO_3 \cdot K$ mw: 214.00

PROP: Colorless, triclinic crystals or white crystalline powder. Becomes monoclinic at 72°. Also undergoes 2 phase changes below room temp, but remains triclinic. Mp: 560°, d: 3.89. Very sol in H_2O; insol in alc.

SYN: IODIC ACIODIC ACID, POTASSIUM SALT

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

SAFETY PROFILE: Poison by ingestion and intraperitoneal routes. A trace mineral added to animal feeds. Potentially explosive reaction with charcoal + ozone, metals (e.g., powdered aluminum, copper), arsenic carbon, phosphorus, sulfur, alkali metal hydrides, alkaline earth metal hydrides, antimony sulfide, arsenic sulfide, copper sulfide, tin sulfide, metal cyanides, metal thiocyanates, manganese dioxide, phosphorus. Violent reaction with organic matter. When heated to decomposition it emits very toxic fumes of I^- and K_2O. See also IODATES.

PLK500 CAS:7681-11-0 HR: 3
POTASSIUM IODIDE
mf: IK mw: 166.00

PROP: Colorless or white granules or colorless cubic crystals. Mp: 681°, bp: 1330°, d: 3.13, vap press: 1 mm @ 745°. Slily hygroscopic. Very sol in water; mod sol in alc and Me_2CO; sparingly sol in Et_2O.

SYNS: KI-N □ KNOLLIDE □ POTIDE

CONSENSUS REPORTS: Reported in EPA TSCA Inventory.

SAFETY PROFILE: Poison by intravenous route. Moderately toxic by ingestion and intraperitoneal routes. Human teratogenic effects by ingestion: developmental abnormalities of the endocrine system. Experimental teratogenic and reproductive effects. Mutation data reported. Explosive reaction with charcoal + ozone, trifluoroacetyl hypofluorite, fluorine perchlorate. Violent reaction or ignition on contact with diazonium salts, diisopropyl peroxydicarbonate, bro-

DOT CLASSIFICATION: 5.1; *Label:* Oxidizer

SAFETY PROFILE: Moderately toxic to humans by an unspecified route. Moderately toxic experimentally by ingestion and intraperitoneal routes. A gastrointestinal tract and kidney irritant. Can cause hemolysis of red blood cells and methemoglobinemia. Toxic dose to a human is about 5 g.

A powerful oxidizer and very reactive material. It has been the cause of many industrial explosions. May explode on heating. Explosive reactions with ammonium chloride, aqua regia + ruthenium, sulfur dioxide solutions in ether or ethanol. Reacts with fluorine to form the explosive gas fluorine perchlorate. It can react violently with many substances. When heated to decomposition it emits very toxic fumes of Cl^- and K_2O. Used in the manufacture of soap, glass, and pottery. See also CHLORATES.

PLA500 CAS:7447-40-7 HR: 3
POTASSIUM CHLORIDE
mf: ClK mw: 74.55

PROP: Colorless or white crystals or powder; odorless with salty taste. D: 1.987, mp: 771° (subl @ 1500°). Very sol in H_2O; sol in Et_2O; sparingly sol in EtOH.

SYNS: CHLORID DRASELNY (CZECH) ☐ CHLOROPOTASSURIL ☐ DIPOTASSIUM DICHLORIDE ☐ EMPLETS POTASSIUM CHLORIDE ☐ ENSEAL ☐ KALITABS ☐ KAOCHLOR ☐ KAON-CL ☐ KAY CIEL ☐ K-LOR ☐ KLOTRIX ☐ K-PRENDE-DOME ☐ PFIKLOR ☐ POTASSIUM MONOCHLORIDE ☐ POTAVESCENT ☐ REKAWAN ☐ SLOW-K ☐ TRIPOTASSIUM TRICHLORIDE

CONSENSUS REPORTS: Reported in EPA TSCA Inventory

SAFETY PROFILE: A human poison by ingestion. Poison experimentally by ingestion, intravenous, and intraperitoneal routes. Human systemic effects by ingestion: nausea, blood clotting changes, cardiac arrhythmias. An eye irritant. Mutation data reported. Explosive reaction with BrF_3, sulfuric acid + potassium permanganate. When heated to decomposition it emits toxic fumes of K_2O and Cl^-.

PLB250 CAS:7789-00-6 HR: 3
POTASSIUM CHROMATE(VI)
mf: $CrO_4 \cdot 2K$ mw: 194.20

PROP: Rhombic, yellow crystals. Mp: 975°, d: 2.73 @ 18°. Sol in water; insol in alc. Me_2CO, and PhCN.

SYNS: DIPOTASSIUM CHROMATE ☐ CHROMATE OF POTASSIUM ☐ DIPOTASSIUM CHROMATE ☐ DIPOTASSIUM MONOCHROMATE ☐ NEUTRAL POTASSIUM CHROMATE ☐ TARAPACAITE

CONSENSUS REPORTS: NTP 7th Annual Report On Carcinogens. IARC Cancer Review: Group 1 IMEMDT 49,49,90; Human Sufficient Evidence IMEMDT 49,49,90; Human Inadequate Evidence IMEMDT 23, 205,80; Animal Inadequate Evidence IMEMDT 23,205,80. Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program. Chromium and its compounds are on the Community Right-To-Know List.

OSHA PEL: CL 0.1 mg(CrO_3)/m³
ACGIH TLV: TWA 0.05 mg(Cr)/m³; Confirmed Human Carcinogen

SAFETY PROFILE: Confirmed carcinogen with experimental tumorigenic data. Poison by ingestion, intravenous, subcutaneous, and intramuscular routes. An experimental teratogen. Other experimental reproductive effects. Human mutation data reported. A powerful oxidizer. When heated to decomposition it emits toxic fumes of K_2O. Used as a mordant for wool, in the oxidizing and treatment of dyes on materials. See also CHROMIUM COMPOUNDS.

PLB500 CAS:10141-00-1 HR: D
POTASSIUM CHROMIC SULFATE
mf: $Cr \cdot 2H_2O_4S \cdot K$ mw: 287.26

SYNS: CHROME ALUM ☐ CHROME POTASH ALUM ☐ CHROMIC POTASSIUM SULFATE ☐ CHROMIC POTASSIUM SULPHATE ☐ CHROMIUM POTASSIUM SULFATE (1:1:2) ☐ CHROMIUM POTASSIUM SULPHATE ☐ CRYSTAL CHROME ALUM ☐ POTASSIUM CHROMIC SULPHATE ☐ POTASSIUM CHROMIUM ALUM ☐ POTASSIUM DISULPHATOCHROMATE(III) ☐ SULFURIC ACID, CHROMIUM (3+) POTASSIUM SALT (3:1:1)

CONSENSUS REPORTS: IARC Cancer Review: Group 3 IMEMDT 49,49,90; Animal Inadequate Evidence IMEMDT 49,49,90; Human Inadequate Evidence IMEMDT 49, 49,90. Chromium and its compounds are on the Community Right-To-Know List. Report-

17 7 0023

SDP000 CAS:506-64-9 HR: 3
SILVER CYANIDE
DOT: UN 1684
mf: CAgN mw: 133.89

PROP: White, odorless, tasteless powder that darkens upon exposure to light. Stable in dry air. Mp: 320° (decomp). d: 3.95. Insol in H_2O, alcohols, and dil acids. Sol in aq alkali cyanides, boiling conc HNO_3.

SYNS: CYANURE D'ARGENT (FRENCH) ☐ KYANID STRIBRNY (CZECH) ☐ RCRA WASTE NUMBER P104

CONSENSUS REPORTS: Silver and its compounds, as well as cyanide and its compounds, are on the Community Right-To-Know List. Reported in EPA TSCA Inventory.

DOT CLASSIFICATION: 6.1; *Label:* Poison

SAFETY PROFILE: Deadly poison by ingestion. A skin and severe eye irritant. When heated to decomposition it emits very toxic fumes of CN^- and NO_x. Incompatible with phosphorus tricyanide, fluorine. Used in silver plating. See also SILVER COMPOUNDS and CYANIDE.

SDQ500 CAS:7783-95-1 HR: 3
SILVER(II) FLUORIDE
mf: AgF_2 mw: 145.87

PROP: Very hygroscopic; white when pure; usually a gray-black or brownish amorphous solid. Light sensitive. D: 4.7. mp: 690°.

SYNS: ARGENT FLUORURE (FRENCH) ☐ ARGENTIC FLUORIDE ☐ SILVER DIFLUORIDE

CONSENSUS REPORTS: Silver and its compounds are on the Community Right-To-Know List. Reported in EPA TSCA Inventory.

OSHA PEL: TWA 0.01 mg(Ag)/m³; 2.5 mg (F)/m³
ACGIH TLV: TWA 0.01 mg(Ag)/m³; 2.5 mg (F)/m³
NIOSH REL: (Inorganic Fluorides) TWA 2.5 mg(F)/m³

SAFETY PROFILE: Poison by subcutaneous route. Powerful oxidizing agent. Mixtures with boron + water are explosive. When heated to decomposition it emits toxic fumes of F^-. See also FLUORIDES and SILVER COMPOUNDS.

SDR500 CAS:2386-52-9 HR: 3
SILVER METHYLSULFONATE
mf: $CH_3O_3S \cdot Ag$ mw: 202.97

SYNS: METHANESULFONIC ACID, SILVER SALT ☐ METHANESULFONIC ACID, SILVER(1+) SALT ☐ SILVER METHANESULFONATE

CONSENSUS REPORTS: Silver and its compounds are on the Community Right-To-Know List. Reported in EPA TSCA Inventory.

OSHA PEL: TWA 0.01 mg(Ag)/m³
ACGIH TLV: TWA 0.01 mg(Ag)/m³

SAFETY PROFILE: Poison by intravenous route. When heated to decomposition it emits toxic fumes of SO_x. See also SULFONATES and SILVER COMPOUNDS.

SDS000 CAS:7761-88-8 HR: 3
SILVER(I) NITRATE (1:1)
DOT: UN 1493
mf: $NO_3 \cdot Ag$ mw: 169.88

PROP: Colorless, odorless, transparent, large or small white crystals. Not photosensitive when pure. Mp: 212°, bp: 444° (decomp), d: 4.352 @ 19°. Very sol in ammonia, water; sldly sol in ether.

SYNS: LUNAR CAUSTIC ☐ NITRATE D'ARGENT (FRENCH) ☐ NITRIC ACID, SILVER(1+) SALT ☐ SILBERNITRAT ☐ SILVER(1+) NITRATE ☐ SILVER NITRATE (DOT)

CONSENSUS REPORTS: Silver and its compounds are on the Community Right-To-Know List. EPA Genetic Toxicology Program. Reported in EPA TSCA Inventory.

OSHA PEL: TWA 0.01 mg(Ag)/m³
ACGIH TLV: TWA 0.01 mg(Ag)/m³
DOT CLASSIFICATION: 5.1; *Label:* Oxidizer

SAFETY PROFILE: A human poison. Experimental poison by ingestion, intravenous subcutaneous, and intraperitoneal routes. Experimental reproductive effects. Human mutation data reported. A severe eye irritant. A powerful caustic and irritant to skin, eyes, and mucous membranes. Swallowing can cause severe gastroenteritis that may be fatal. Questionable carcinogen with experimental tumorigenic data. A powerful oxidizer. Incompatible with acetylene, acetylides, alkalies, aluminum, antimony salts, arsenic, arsenites, bromides, carbon, carbonates, chlorides, ClF_3, chlorosulfuric acid, copper,

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creosote, ethanol, ferrous salts, hypophosphites, iodides, Mg powder with H_2O, morphine salts, NH_4 with KOH to yield black Ag_3N, oils, PH_4, phosphates, phosphonium iodide, phosphorus, plastics, sulfur, tannic acid, tartrates, thiocyanates, vegetable decoctions and extracts, zinc with NH_4 with KOH. When heated to decomposition it emits toxic fumes of NO$_x$. See also SILVER COMPOUNDS and NITRATES.

SDU500 CAS:20667-12-3 HR: 3
SILVER(1+) OXIDE
mf: Ag_2O mw: 231.74

PROP: Brownish-black, heavy, odorless powder. Light sensitive. D: 7.22 @ 25°/4°. Decomp at approx 200°. Very sol in dilute nitric acid, ammonia; less sol in NaOH solns; insol in alc.

SYNS: ARGENTOUS OXIDE ☐ DISILVER OXIDE

CONSENSUS REPORTS: Silver and its compounds are on the Community Right-To-Know List. Reported in EPA TSCA Inventory.

OSHA PEL: TWA 0.01 mg(Ag)/m³
ACGIH TLV: TWA 0.01 mg(Ag)/m³

SAFETY PROFILE: A poison by intraperitoneal route. Moderately toxic by ingestion. Flammable by chemical reaction: an oxidizing agent. Explodes in contact with ammonia. Incompatible with CuO, (NH_4 + ethanol), (hydrazine + ethanol), CO, H_2S, Mg, auric sulfide, Sb sulfide, Hg sulfide, nitroalkanes, Se, S, P, K, Na, NaK, seleninyl chloride. See also SILVER COMPOUNDS.

SDW000 HR: 3
SILVER PEROXYCHROMATE
mf: $AgCrO_4$ mw: 239.87

CONSENSUS REPORTS: Silver and its compounds, as well as chromium and its compounds, are on the Community Right-To-Know List.

SAFETY PROFILE: Confirmed carcinogen. An oxidant. When mixed with H_2SO_4 @ −80° it explodes on slow warming to −30°. See also CHROMIUM and SILVER COMPOUNDS.

SEB000 HR: 2
SMOG

PROP: An atmospheric combination of smoke, fog, and industrial gases. Composition: Contents vary, but sulfur dioxide, oxides of nitrogen, and ozone are common components; others are sulfides, fluorides, chlorides, carbon particles, and various hydrocarbons.

SAFETY PROFILE: Moderately irritating to eyes and mucous membranes. Numerous chronic effects have been reported in susceptible populations. A common air contaminant. Possibly carcinogenic.

SEC000 HR: 3
SMOKE CONDENSATE, cigarette

SYNS: CIGARETTE SMOKE CONDENSATE ☐ CSC ☐ TOBACCO SMOKE CONDENSATE ☐ TOBACCO TAR

CONSENSUS REPORTS: IARC Cancer Review: Group 1 IMEMDT 7,359,87; Human Sufficient Evidence IMEMDT 38,309,86; Animal Sufficient Evidence IMEMDT 38,309, 86.

SAFETY PROFILE: Confirmed carcinogen with experimental carcinogenic, neoplastigenic, and tumorigenic data. An experimental teratogen. Human mutation data reported. See also NICOTINE, SMOKELESS TOBACCO, and various tobacco entries.

SED400 HR: 3
SMOKELESS TOBACCO

PROP: A variety of habituating substances containing tobacco as the major ingredient and used without burning. Tobacco is a product of the leaves and stems of two species of Nicotiana, *N. tabacum* (grown in North America and Western Europe) and *N. rustica* (grown in the former USSR and India). There is considerable evidence that many if not all of the forms of smokeless tobacco are human carcinogens.

The smokeless tobaccos are introduced into the body through the mouth (chewing tobacco, snuff, misshri, gudakhu, shammah, khaini, nass, naswar, or in combination with betel quid) or nose (snuff).

The various smokeless tobacco products are described below:

Chewing tobacco is placed between the